9/12/2011 Site visit City of Austin's captive propagation program with Dee Ann Chamberlain

In attendance: Angie Reisch, Joshua Booker, Clayton Napier, Adam Zerrenner, Wade Harrell, Chris Harper, Erik Orsak

Current stock

Species maintained at the facility: Barton Springs, Austin blind, and Jollyville Plateau salamanders

Current captive population: approximately 500 Barton Springs salamanders (100 wild-caught, 400 lab-raised)

59 Austin blind salamanders, 13 are wild-caught

40 wild-caught, 5 lab-raised Jollyville Plateau salamanders

Salamanders are maintained at 70°F, higher temperatures (approaching 80°) produce gas trauma in both Barton Springs and Austin blind salamanders.

Husbandry

Water used in captive facility is drawn from a nearby well, which has a different flow path than Barton Springs, but identical chemistry. PH, temperature, chemistry of the well water is not altered, but is filtered using a ½ micron carbon block filter. All tanks are an isolated system and receive a 15% water change every week. Salamanders are all given the same diet, which includes amphipods and worms.

To sex salamanders, the ventral side is examined for the presence or absence of testes and/or eggs. It is easier to sex Barton Springs than Austin blind salamanders because the Barton Springs has a more translucent ventral side. The courtship dance, which can last for hours, is species specific, but no one has yet to observe the male drop its spermatophore. In the captive facility, 1/3 of the eggs survive to 6 months and take 35 days to develop.

Pathologies

Limb loss seen in Barton Springs and Austin blind salamanders. The cause of this phenomenon is not known, Chamberlain believes that this may be a calcium issue because the water in the captive facility slowly loses calcium due to recirculation. Digits and limbs will slowly regress in some individuals and then regenerate. This is not seen in wild populations, but rather is restricted to thecaptive salamanders.

All salamander species test positive for chytridiomycosis; however, this does not seem to have a detrimental effect on these species. The bacteria that acts to ward off chytrid fungus has been found on the feet of Barton Springs salamanders.

If there is an accidental increase in temperature, salamanders are prone to gas bubble trauma. This pathology has also been seen in wild populations of Barton Springs salamanders after super saturation of spring water from cold winter weather and rain events.