DESERT TORTOISE Head Start Program

Edwards Air Force Base, California

INTRODUCTION

The desert tortoise (*Gopherus agassizii*) Head Start Program at Edwards Air Force Base, also known as the Juvenile Hatchery at the Edwards Tortoise Study Site (JHETSS), began in 2002 as an adaptive management project to test at what age and in what conditions tortoise hatchlings raised in predator exclusion pens can be released into the wild to increase the adult breeding population. The program included a test to determine if supplemental irrigation can accelerate achievement of predator-resistant body size by increasing and prolonging food available in the pens. Edwards AFB biologists are using the adaptive management study to test the ideal age and size for release for survivability, as well as site conditions.

STUDY AREA

METHODS (Photo Strip)

1.Base biologists locate a fixed number of wild female desert tortoises and affix radio transmitters to their shells, so that they can be located as egg-laying season nears. These tortoises are tracked monthly.

2.From March to early May, females are monitored for egg production through X-rays. When the females start showing eggs in the X-ray, they are tested for any tortoise-related diseases and segregated into a healthy or diseased status group prior to moving into the pens.

3. The females are allowed to lay their eggs in the pens, and then returned to the original capture locations.

4. Eggs incubate in the pens during the summer and hatch in the fall (September to early November).

5. When the tortoises hatch they are assigned individual numbers for tracking, which are marked on their shells.

6. Young tortoises are kept in the pens until they meet the study's parameters and then are released with the radio transmitters attached to their shells and tracked monthly.

(The cycle is repeated every year at approximately the same time)

RESULTS

TORTOISES IN PENS

YEAR ANIMAL HATCHED	NO. OF ANIMALS CURRENTLY IN THE PENS
2003	3
2004	6
2005	26
2006	9
2007	21
2008	38
Total	**103**

EGG PRODUCTION 2003-2008

YEAR	NO. OF FEMALES	EGGS	HATCHED	PERCENT
2003	10	40	33	82
2004	18	80	35	44
2005	21	95	40	42
2006	19	89	58	65
2007	6	27	21	78
2008	19	85	53	62
Totals	93	416	240	

DISCUSSION

To this point, the program has found that the pens increase survival of the hatchlings. Future research will continue to use adaptive management to discover the ideal age, size and site conditions for juvenile release. In 2008, juvenile release was conducted at two different locations — a rocky area and a sandy area — to test if the rocky area camouflages the juveniles to better increase their survival rate. Data collection is still in progress. To be considered a success, animals must reach and contribute to the breeding population. Investigation of various release parameters will continue until survivorship reaches at least 10 to 12 percent. Once techniques are proven to be successful this project should be expanded into a multi-agency effort to recover the species.