Making Room for the Amargosa Toad

by Michael Burroughs

The male Amargosa toad does not have an advertising call typical of most toads. Seeking shelter in rodent burrows, rock crevices, or debris piles during the day, the Amargosa toad becomes active after dark. From February through June, males typically move to the water's edge to await the arrival of females. A large female toad may lay as many as 6,000 eggs in long strands often twined through vegetation.
Photo by Michzel Burroughs

When a university biologist studying the Amargosa toad *(Bufo nelsoni)* concluded in 1994 that only 32 adult toads remained in the Oasis Valley of southern Nevada, a petition to list this amphibian as an endangered species soon followed. During the subsequent 12-month status review, intensified survey efforts located hundreds of toads at other sites in the area. Based on these discoveries and commitments by land managers to initiate actions to conserve the toad, the Fish and Wildlife Service (FWS) determined that listing the Amargosa toad as endangered or threatened was not warranted.

Endemic to the Oasis Valley in southern Nye County, Nevada, the Amargosa toad is found only along a 10-mile (16-kilometer) stretch of the Amargosa River and interconnected spring systems. Recognizing the biological uniqueness of this area, which supports a number of rare animals and plants, the Nevada Division of Wildlife (NDOW), Bureau of Land Management (BLM), FWS, and others have united to develop a conservation strategy aimed at ensuring the survival of the toad and the ecosystem on which it depends.

At the southern end of the toad's distribution lies the rural community of Beatty, situated between the Nevada Test Site to the east and Death Valley National Park to the west. Surrounded by alkali soils, rocky and often barren slopes, and Mojave/Great Basin Desert vegetation, the lush springs and riparian corridor of the valley provide important habitat for such species as the Amargosa toad, Oasis Valley speckled dace *(Rhinichthys osculus* ssp.*)*, and numerous neotropical migratory birds. As with any oasis in the desert, competition for limited resources can be intense, and the availability of water often determines survivability for humans and wildlife alike. In the Oasis Valley, relatively large tracts of private land occur mostly along the riparian corridor, adjacent to public lands administered by the BLM. Because of the sparse human population and the absence of commercial or industrial development in the area, the Amargosa toad is not currently threatened with the kinds of habitat destruction many other species face. In fact, the toad may even benefit from low-impact land uses that provide cover and prey. For example, toads congregate under street lights at night to take advantage of the abundance of insects, their primary food source.

Threats

Other than the obvious vulnerability that comes with a narrow distribution and relatively low population size, the Amargosa toad also faces certain other threats. In the mid-1980's, crayfish *(Procambarus* sp.*)* were introduced to the Oasis Valley, and they have expanded into spring and riparian systems inhabited by Amargosa toads. Attempts to eradicate or control this non-native crustacean have been mostly unsuccessful. Crayfish likely consume eggs of the toad and Oasis Valley speckled dace, as well as tadpoles and fish larvae. Wild burros, another non-native species found throughout the valley, trample wet areas and foul surface water. Another ecological impact is caused by tamarisk or saltcedar *(Tamarisk chinensis)*, an invasive non-native tree that has become established along stretches of the river. In areas where

saltcedar has become a dominant canopy species, biologists are concerned that the desert riparian ecosystem may be converted to a system unsuitable for natives. Potential human impacts to the toad include water diversions, collection and vandalism, off-highway vehicle activity within the river corridor, flood-control activities, and the potential for urban or commercial development.

Conservation Agreement

A small group of government and university biologists formed the Amargosa Toad Working Group (ATWG) in 1994 to address potential threats, develop a conservation strategy, and oversee management. Its members have developed a draft agreement that covers not only the toad but also other vulnerable species in the area, including the threatened desert tortoise *(Gopherus agassizii)*, the endangered southwestern willow flycatcher *(Empidonax traillii extimus)*, and 18 additional species of concern that occur in the Oasis Valley. Because so little is known about the Amargosa toad, studies of life history and predator interactions are identified in the agreement as high-priority conservation needs.

The Nature Conservancy (TNC) has been a long-term advocate for the toad's conservation. In July 1999, TNC accomplished a major milestone with the purchase of a 140-acre (60-hectare) ranch outside Beatty with plentiful springs, wetlands, and toads. Acquisition of this key parcel gives biologists the opportunity to conduct experimental habitat management and provide an ecological showcase to the local community. Another major conservation achievement took place when Nye County, a relatively large county consisting mostly of small rural communities surrounded by Federal land, became a cooperator with the agreement. As a cooperator, Nye County will assume the lead for public involvement and community coordination on the group's conservation actions. Nye County will also work with State and Federal agencies to develop conservation easements and voluntary management agreements.

In 1998, the NDOW, with funding from the Species at Risk Program, initiated a long-term mark/recapture study using passive integrated transponder (PIT) tags to identify individual toads. Recapture data will provide information on such important subjects as survival, movement, and growth of individual toads. The BLM is in the process of designating the Oasis Valley as an Area of Critical Environmental Concern, which will provide additional protection to both occupied and potential toad habitat on lands administered by the BLM.

Local conservation partners include long-term residents and recently arrived retirees. Several private landowners allow State and Federal biologists unlimited access to their lands to search for the secretive toads. One landowner in particular has joined the cause by donating time and heavy equipment to work with biologists to modify springs and create ponds on his 320-acre (130-ha) quarry and ranch north of town.

The ATWG is optimistic that conservation and management actions will continue to improve the status of the Amargosa toad, along with the ecosystem upon which it and other sensitive species depend.

The Amargosa River is home to a number of rare plants and animals.
Photo by Michael Burroughs

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