The Infamous Tres Rios Beavers

Printed in the AWPCA newsletter, Volume 22, No. 5 - 2005

The Tres Rios Demonstration Constructed Wetland Project (Tres Rios) has been operational since 1995, using reclaimed water to provide water quality improvements, wildlife habitat, recreation, and research opportunities in the far south west corner of Phoenix, Arizona. Research has concentrated on water quality improvements, vegetation sustainability, mosquito control, and wildlife attraction. Tres Rios was constructed and is run by the City of Phoenix, and owned by the Sub-Regional Operating Group (Glendale, Mesa, Phoenix, Scottsdale, and Tempe) with help from the United States Bureau of Reclamation. Some of the other partners in Tres Rios include the Arizona Department of Water Resources, Arizona Game & Fish Department, Environmental Protection Agency, Arizona State University, and University of Arizona.

Contrary to popular belief, the area around the confluence of the Salt and Gila Rivers was once lush and marshy. Beavers were responsible for creation of many of the marsh areas through dam building along the river. However, beaver trappers entered the area, the rivers were dammed, and beaver numbers declined in the late 1800's and early 1900's until the area was left with few signs that beavers ever resided here. The Tres Rios Constructed Wetlands Demonstration Project team was excited and surprised to discover soon after completion of the wetland that beavers had moved in once more. The arrival of the beaver was a sign that the wetlands were doing their job in attracting native wildlife and providing habitat that has been severely degraded in the last 100 years.

Then, the beavers multiplied. Using a nighttime spotlight survey, beaver numbers were estimated at somewhere between 34 and 50 individuals. Other evidence of excessive beaver activity included extensive damage to wetland plants from foraging, cut or girdled trees, burrows, and runways. The outlet weirs were repeatedly clogged, making it impossible to regulate the flow and level of the water surface. Berms and maintenance roads were compromised. Water short-circuited through the runways established by beavers dragging wood to burrow sites. The detention time in the wetlands was shortened, and wetlands staff was having trouble just keeping up.

At this point the managers at Tres Rios realized that a few beavers were good, but 50 beavers were bad. What could they do about it? A quick check of the internet gives some good suggestions on how to catch, skin, and cook beavers. But, instead a call was put in to the United States Department of Agriculture Wildlife Services (Wildlife Services). They have experience all over the country in beaver control. However, many of these rely heavily upon removal and destruction of the individual beavers overpopulating a region. This option was not acceptable to the managers of Tres Rios.

After consultation with Wildlife Services, a cooperative non-lethal beaver research program was established. Basically, the first phase involved frightening or excluding the beavers. This didn't work very well, but there did appear to be some value in fencing of particularly vulnerable areas. The second phase developed a mobile laboratory, and performed controlled experiments with anesthetics and transmitters. Currently, beavers are being trapped and tagged for ecology and movement studies.

In nature, a balance is always achieved. As food runs out, populations decline then rebound when food is more plentiful. This is a natural process when a species moves into a new area. However, in a constructed wetland with varied purposes, this type of a cycle is not ideal. Invasive species, such as salt cedar, can quickly replace more desirable native species, unless efforts are made to protect the natives. The goal of the research is to provide a more stable beaver population, which will stop this destructive boom and bust cycle from happening. In the end, humans are only capable of controlling

nature to a very limited degree. By understanding the natural process, and working within the limits, Tres Rios hopes to provide a habitat that is beneficial to beavers, other native plants and wildlife, and humans.