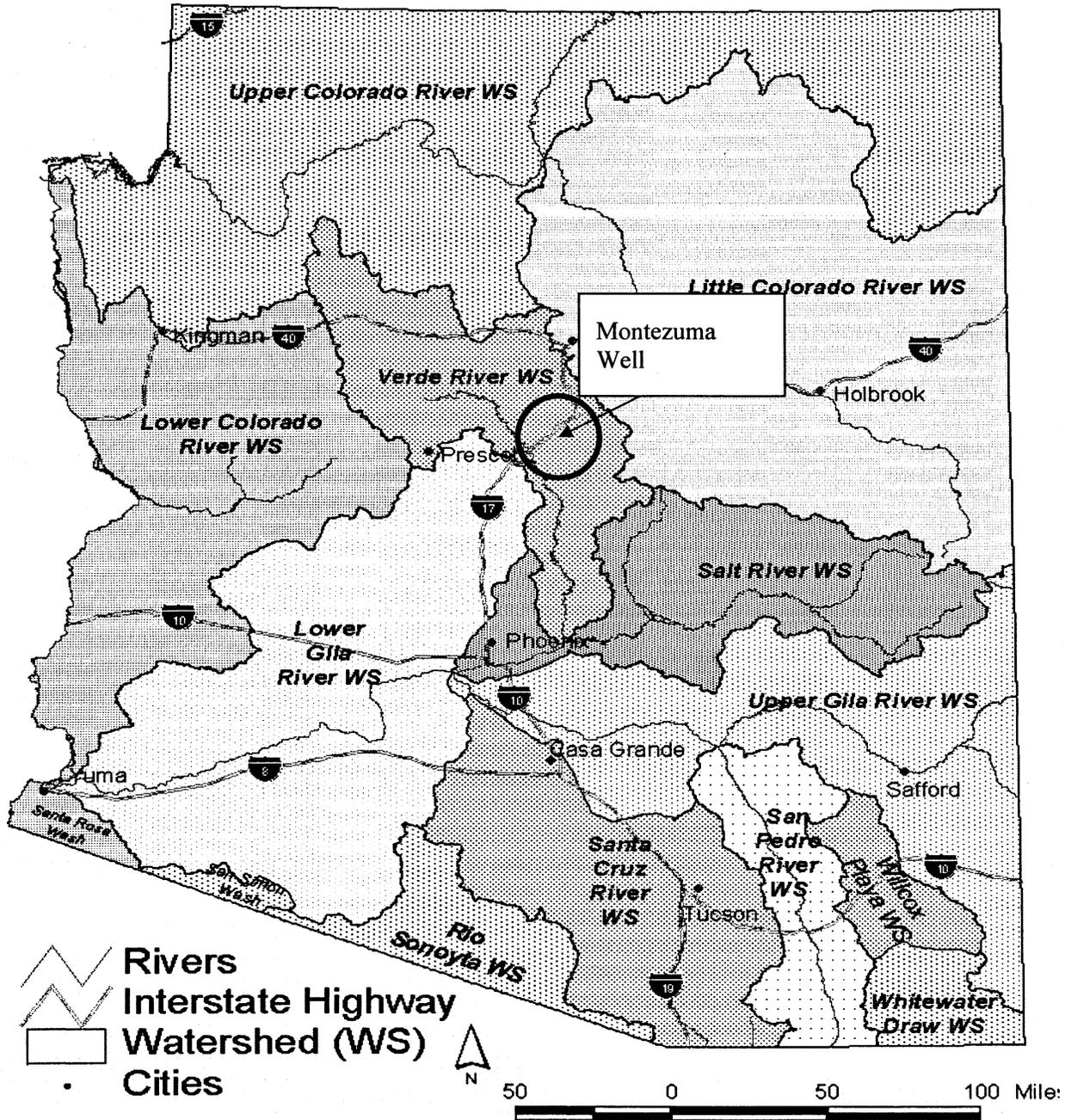


ARIZONA WATERSHED MAP

FY 2008



Title of Project: Montezuma Well Riparian Restoration Project

EXECUTIVE SUMMARY

The Montezuma Well Unit of Montezuma Castle National Monument is located along Wet Beaver Creek, a tributary to the Verde River in central Arizona. The unit was incorporated into the Monument in 1943 to preserve and protect the unique geology and hydrology of the Well, as well as the prehistoric and historic significance of the area. Water from the Well exits above river level and flows along the flood terrace and eventually into Beaver Creek. The Monument has a legal water right to half the flow volume generated by the Well.

Water is scarce in the desert areas of central Arizona and is quickly captured and utilized. Montezuma Well is no exception. Its waters were used a thousand years ago by the Sinagua culture to irrigate beans, maize, and squash in fields below the spring. By the 1860's Anglos settled in the Verde Valley, enlarged the fields and improved the ditches and irrigation system. Riparian vegetation was completely removed from the fields to maximize the growth of crops for domestic and commercial use. Active farming was discontinued with the transfer of the property to the NPS in 1947, at which time the project area was used for cattle grazing until about 1993. Since that time the fallow fields have been invaded by a variety of invasive and non-native plant species that effectively limit the reestablishment of diverse native riparian vegetation.

The purpose of this project is to: 1) restore and enhance riparian vegetation/habitats by managing invasive weedy species and replacing them with native species along the flood terrace of Wet Beaver Creek; 2) reconnect the riparian habitats that are created by Wet Beaver Creek and the irrigation ditch, 3) restore and enhance the declining riparian desert bosque and grassland habitats, and 4) to provide educational opportunities for Monument visitors regarding the importance of riparian plant communities and their habitats. Project tasks include the management of invasive plant species; the revegetation of abandoned fields with a variety of native riparian plant species to reestablish diverse wildlife habitats; and enhance educational opportunities for Monument visitors.

The project area includes approximately 40 acres of the active flood terrace along Wet Beaver Creek. These terraces are inundated infrequently by large flood events and typically support a diverse dry riparian plant community consisting of mesquite bosques and open grasslands that expand and complement the more lush and dense vegetation along Wet Beaver Creek. The mesquite bosque habitat type is limited to riparian corridors and is dependant on desert streams and shallow ground waters associated with adjacent waterways. Mesquite bosque habitats are highly productive for mammals, birds, insects, and reptiles; and provide shade and food sources for wildlife. The project will restore valuable wildlife habitat along Wet Beaver Creek and improve water quality by reducing erosion and sediment carried into Wet Beaver Creek during storm events.

Invasive and non-native vegetation that now dominates the project area will be removed mechanically and chemically as necessary. Native vegetation plots will be designed to maximize diversity, creating a rich mosaic of plants and habitats. The plantings will be supported initially by water from the Well carried in a ditch along the uphill side of the project area. The existing irrigation system will be repaired and improved to allow for effective, efficient water management. Once native vegetation becomes established, irrigation will be removed and the plants maintained by precipitation and local groundwater. The riparian terrace habitat will facilitate learning for visitors through interpretive signs that explain the importance of and connection to the surrounding riparian area.

This project is a private-public collaborative partnership between Natural Channel Design, Inc. (NCD) and the National Park Service (NPS). NCD will manage grant monies, prepare technical designs, and coordinate and supervise construction. As landowner, the NPS will work closely with NCD to complete all AWP tasks as well manage the substantial matching tasks to complete the project as well as assume the responsibility for operation and management of the project over the next 20 years. The NPS has been encouraged to outsource as many projects as possible in the interest of supporting small, local businesses and reducing permanent staff. The park has tried to implement this project since 1993 and always failed due to a lack of staff time and expertise. Natural Channel Design was selected for the partnership because of their local knowledge of the area, history of successfully receiving and implementing Water Protection Fund grants, and expertise in engineering, irrigation systems, riparian restoration, project design and implementation. This collaborative partnership will result in a more successful and cost-efficient restoration project.