

Paria River Invasive Tree Removal and Riparian Restoration Project

Partnership to Protect Riparian and Wilderness Values

The Paria Canyon – Vermilion Cliffs Wilderness is within Vermilion Cliffs National Monument and 27 miles of the Paria River has been recommended for wild river status. Natural areas within this canyon are lush and diverse, but become increasingly dominated by invasive tamarisk (*Tamarix sp.*) and Russian olive (*Elaeagnus angustifolia*) in the lower portions near Lees Ferry. The encroachment of these species poses a threat to the unique riparian ecosystem of this special canyon. The Paria River is one of the largest, and most important tributaries of the Colorado River below Glen Canyon Dam. Removing invasive species is a critical step in maintaining the ecological integrity of the greater lower Colorado River System.



Tamarisk encroachment threatens riparian ecosystem.

The Bureau of Land Management and Grand Canyon Trust have formed a partnership to restore the ecological integrity of this river system. This cooperative effort to restore and preserve natural stream conditions, including proper channel function and wildlife habitat, by eradicating non-native shrubs and trees is being funded by the Arizona Water Protection Fund.

Restoring Riparian Diversity

The highly invasive tamarisk and Russian olive were introduced into the southwestern United States in the late 19th century to help control stream bank erosion. Since then, these species have spread throughout the west and caused major changes to rivers and streams. In the Paria River, their spread has increased due to natural flood cycles within the river system that carries tamarisk seeds from upstream, changes in climate, and by their ability to out compete native species.

Tamarisk and Russian olive impact riparian ecosystems in several ways. Both of these species can alter soil nutrients and groundwater availability, and can displace native vegetation following disturbances such as flooding or drought. Tamarisk and Russian olive both spread by seed and can propagate from buried or submerged stems. A mature tamarisk can consume large amounts of water and produce hundreds of thousands of seeds in a single year that are quickly dispersed by wind and water. Russian olive produce fewer, hardier seeds, however they may be viable for several years, and are dispersed over long distances by birds. The high competitive and reproductive success of tamarisk and Russian olive often results in dense stands where only these two plants will grow, reducing the diversity of other plants and wildlife species, increasing fire hazard, and altering stream hydrology.



Russian olive along the banks of the Paria River.

Removal Methods and Schedule

Invasive species removal work will occur between March and November from 2008 through 2011. Volunteers, led by Grand Canyon Trust trip leaders, will remove tamarisk and Russian olive from 19 miles of the Paria River Canyon. The treatment area will include Buckskin Gulch from the confluence with Paria Canyon to one mile up canyon in order to diminish non-native recruitment. Crews will begin working in Buckskin Gulch and continue downstream toward Wrather Canyon.

Tamarisk and Russian olive will be removed using hand tools, and stumps will be carefully treated with herbicide to prevent regrowth. Triclopyr, with the trade name Garlon, is a selective herbicide and is generally low in toxicity to species other than tamarisk and Russian olive. It is applied in a manner that prevents it from entering the river. This is the most effective way to successfully treat these species within this slot canyon area, while minimally impacting the surrounding environment. Treated cut stumps can be identified by the blue dye that is mixed with the herbicide, and will degrade in the sunlight. Although low in toxicity, recreationalists should avoid coming into physical contact with treated stumps, and wash with soap and water if contact should occur. Cut material may be piled and burned during winter months. Notices will be placed at trailheads when burning is occurring and smoke may be present in the canyon.



Volunteers removing invasive plants during a similar project in Grand Canyon National Park.

Post-treatment monitoring will continue for a minimum of 15 years. Data will be used to determine the success of invasive species removal and reestablishment of native vegetation. Information gained from this project will be used to adaptively manage non-native species in the Paria River, and in other areas with similar management issues.

Want To Learn More?

For more information, please contact the Bureau of Land Management at 435-688-3246 or the Grand Canyon Trust at 928-774-7488, or visit <http://www.grandcanyontrust.org> .

To view the Environmental Assessment, please see http://www.blm.gov/az/env_docs/projects/strip/PariaEA.pdf .

To volunteer for this project or get more information about volunteer opportunities, please contact the Volunteer Program Manager at the Grand Canyon Trust: 928-774-7488, or email: VolunteerNow@grandcanyontrust.org or visit <http://www.gctvolunteers.org> .

