



Tamarisk Survey at Saguaro National Park

Background

Tamarisk or salt cedar (*Tamarix ramosissima*), is an invasive shrub or tree that grows in dense thickets along rivers and streams in the western U.S. First introduced to the U.S. in the 19th century, tamarisk was planted as an ornamental tree and used for erosion control. Tamarisk has spread throughout the west causing major changes to natural environments, including riparian areas. Riparian habitats are the most productive, diverse, and valuable habitats in the southwest and the most threatened ecosystem in Arizona. In the southwest, riparian areas account for less than 2% of the land, yet over 65% of the wildlife depend on these areas for survival. Tamarisk is an aggressive competitor. It produces large numbers of seeds and they disperse via wind, flowing water, and animals. Tamarisk can also become established from broken pieces of the plant, which occurs during large flood events. With such high reproductive potential, tamarisk can develop into monoculture stands, block out sunlight, reduce space for natives, deplete soil nutrients, lower water tables, and increase a fuel source for fire spread.

Saguaro National Park has been treating tamarisk (*Tamarix ramosissima*) and athel (*T. aphylla*) since the 1980s. Because the park is primarily a desert ecosystem with intermittent streams, those with water during snow melt and rain fall, tamarisk has not been considered a major issue. However, in 2006, the park experienced the largest flood event in its history. The flood dramatically altered many riparian areas and led to a surge in tamarisk seedlings. For example, in a one mile stretch of Rincon Creek, over 2,000 tamarisk seedlings established; they were subsequently removed. Tamarisk continues to establish along tributaries of Rincon Creek. Without active management, it has the potential to thrive and forever alter riparian areas.



Tamarisk spring growing among the rocks on an ephemeral wash

Efforts

After the 2006 flood event, park staff mounted an effort to survey other intermittent streams with potential tamarisk habitat in the Rincon Mountain District. The primary goal was to inventory, map, and remove tamarisk from approximately 250 miles of drainages. This provided a unique opportunity to explore remote areas of the park, so the survey was expanded to include data collection on wildlife, other non-native plants such as buffelgrass and fountain grass, historic human uses of the park, such as, previously undocumented hunter camps and mining exploration.

Park staff and volunteers worked together to survey these drainages. When a tamarisk was discovered, basic data such as location, maturity, and treatment method were recorded. The method of treatment depended on the size of the plant. Large plants were cut at the base and herbicide was applied to the cut stump. Small plants were removed by digging up the whole plant, including the roots. All living parts of the plant were removed from the drainage to prevent the tamarisk from re-establishing.



Tamarisk stump that has been sprayed with herbicide

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Results

Between November 2010 and May 2011, 74 tamarisks and 3 athel were discovered and treated with herbicide or removed by hand. The presence of tamarisk was limited to 8 of the major drainages, with the most occurrences of tamarisk in the Tina Larga and the Rincon Creek drainages. All of the athel were located on south facing slopes of the Tanque Verde ridge in close proximity to residential areas where it is used primarily by home owners as a shade tree. Athel has been considered “sterile,” but new research has documented it hybridizing with other species in the *Tamarix* genera. Other non-native species encountered during the survey included 1 African sumac, 8 tree tobacco, 6 horehound, and 2 oleanders; all species thought to be previously eradicated from the Park.



Tamarisk flower

More Information

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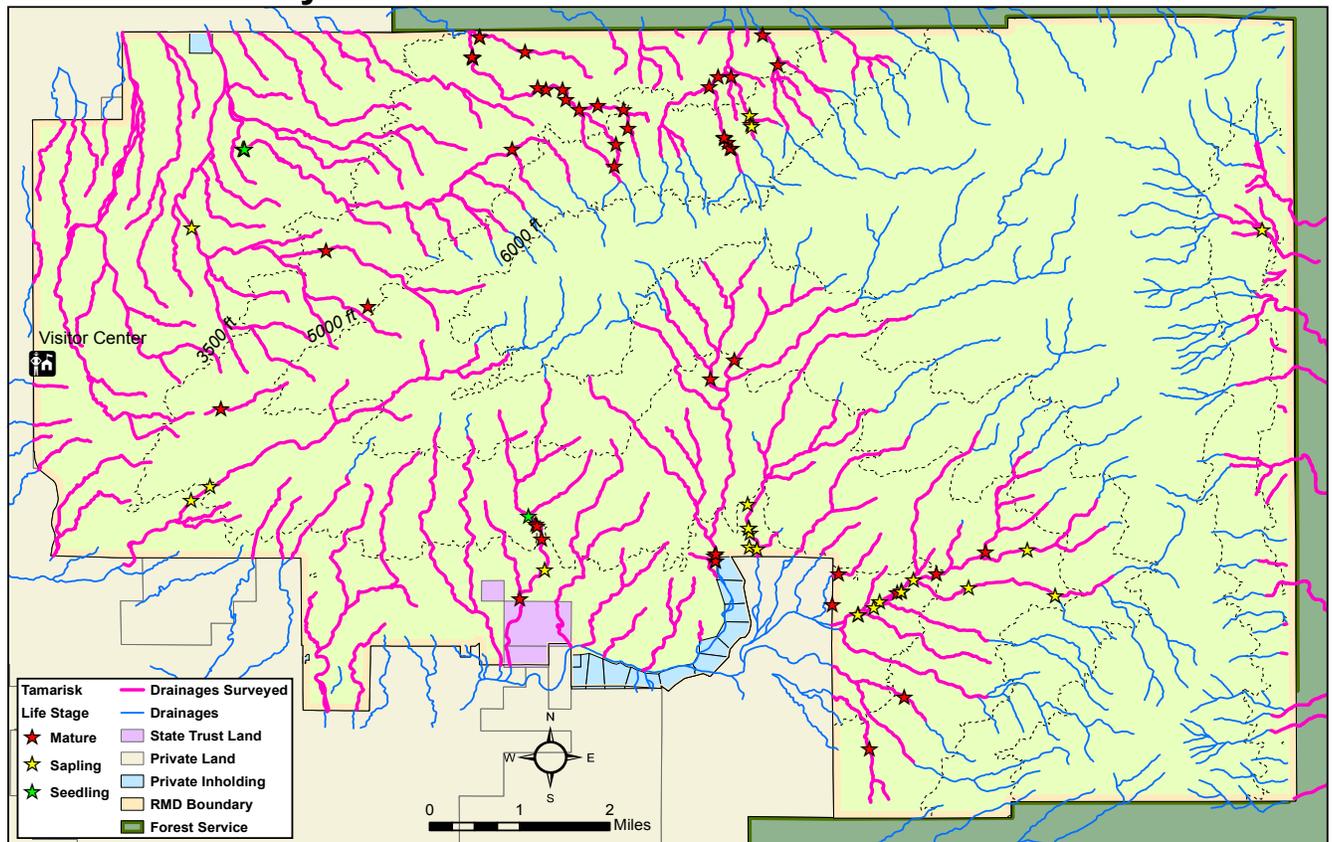
Saguaro Site: <http://www.nps.gov/sagu>
NRInfo Portal: <http://nrimfo.nps.gov/>
IRMA SharePoint site: <http://nrpcsharepoint/irma/>

Saguaro National Park
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Tamarisk Survey 2010/2011



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Data Source: Saguaro National Park

July 2011

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