Invasive Species Management Plans for Florida
Puncture Vine
*Tribulus cistoides* (L.) Zygophyllaceae

**INTRODUCTION**

Puncture vine is a native to Tropical America but because of its tolerance to salt and drought conditions, it has been extensively as a groundcover in coastal landscapes in the U.S., particularly Florida. Its common name, puncture vine, comes from the spiny fruits that are produced, which are an unwelcome ‘thorn’ in the side of many bicyclists, gardeners, and animals. The fruits are sharp enough to puncture tires and are very painful to step on. Even though puncture vine can be very painful, it does have medicinal uses, treating ailments such as headache, nervous disorders, and constipation.

**DESCRIPTION**

Puncture vine is a prostrate herb with opposite, pinnately compound, 6 inch long leaves. These are divided into 6 to 8 pairs of elliptic leaflets ranging from ¼ to ½ inch long. Solitary, bright yellow, 1½ inch wide, 5-petalled flowers are produced. Spiny fruit ½ inch wide are produced after flowering. Seeds are spread easily via machinery, animals, and humans. The spiny seeds become caught in tires or in animal fur, aiding the spread. Seeds are very persistent in the environment, able to remain dormant in the soil for up to 5 years.

**IMPACTS**

Puncture vine invades dunes, coastal lands, sandy sites, median strips, and disturbed sites. Not only is puncture vine considered a Category II invasive by the Exotic Pest Plant Council of Florida, but its potential harm to humans and animals is a great concern.

**MANAGEMENT**

Preventative: The first step in preventative control of puncture vine is to limit planting and removal of existing plants within the landscape. If possible, removal should occur before seeds are produced. Care must be exercised to prevent seed spread and dispersal during the removal process.
Cultural: Limit research in this area.

Mechanical: Puncture vine plants can be controlled by pulling them out of moist soil, but be sure to wear gloves to protect your hands from the prickly fruits. Mowing is not effective due to the prostrate growth habit of this weed.

Biological: There are two biological control agents that have been used with limited distribution in other areas.

Chemical: Glyphosate and dicamba have been used with excellent results. 2,4-D also shows good results. A 1-2% solution of each of these with surfactant is recommended. Certain pre-emergent herbicides can kill puncture vine seedlings as they germinate, but there utility may be limited in natural areas due to soil persistence.

REFERENCES AND USEFUL LINKS:
Floridata Homepage: http://www.floridata.com

University of Florida Center for Aquatic and Invasive Plants: http://aquat1.ifas.ufl.edu/welcome.html

University of Florida's Cooperative Extension Electronic Data Information Source: http://edis.ifas.ufl.edu/index.html


Pacific Island Ecosystems at Risk (PIER). Plant Threats to Pacific Ecosystems: http://www.hear.org/pier/threats.htm

USDA Natural Resources Conservation Service. Plants Database: http://plants.usda.gov

Forest Management of Miami-Dade County: http://www.miamidade.gov/derm/Plants/plants_puncture_vine.asp

Bureau of Land Management, Oregon /Washington: http://www.or.blm.gov
Mature Plant

- Creeping, prostrate perennial
- Spreads through lateral stem formation

Leaves

- Leaves are arranged oppositely
- 6 inches long
- Pinnately compound with 6 to 8 pairs of elliptic leaflets
- Lack terminal leaflet

Flowers and Fruit

- Flowers are solitary
- Bright yellow, 1.5 inches wide
- 5 petals
- Fruit are spiny, ½ inch
- Spread easily by machinery, humans
- Dormant for years