



Project Title: Reintroduction of Endangered Key Tree Cactus

Headline Title (2-5 words): Buying Time Against Rising Seas

Brief Summary (Abstract): A collaborative project to reintroduce the endangered Key tree-cactus (*Pilosocereus robinii*) at a higher elevation in the Florida Keys for the express purpose of buying more time against the rising seas and the effects of storm surge and saltwater intrusion.

Project Location: Florida

Partners: U.S. Fish and Wildlife Service (Vero Beach Ecological Services Field Office), Fairchild Tropical Botanical Garden, and Florida State Parks

Background: The Key tree-cactus (*Pilosocereus robinii*) was listed as an endangered species in 1984 based on a severe reduction in its distribution and abundance due commercial and residential development of the Florida Keys, the only area where the species is known to occur. In recent years a widespread pattern of further decline, perhaps as much as 90 percent, involving most of the remaining 7 populations of the species, including 6 populations that are on lands protected from development. Studies suggest that increased soil salinity resulting from sea level rise, storm surges, and saltwater intrusion, is likely the reason for current declines. Soil salinity beyond a plant's tolerance makes them susceptible to secondary pathogens which cause further injury, eventually leading to mortality of the plant. In 2012, the Service and its partners used topographic data to identify higher elevation in sites within the historic range of the species, and they reintroduced 72 plants in an effort to establish an 8<sup>th</sup> population. This climate adaptation measure is intended to help ensure survival of the species in the face of increasing sea level rise, storm surges, and salt water intrusion.

Project Goals: Support survival of the endangered Key tree-cactus by re-establishing populations on protected lands at elevations higher than existing populations, where there is less risk of mortality due to increased soil salinity resulting from sea level rise, storm surge, and saltwater intrusion.

Strategy Goals Implemented: Goal 2, Strategy 2.2, Action 2.2.3: Where appropriate, actively manage populations (e.g., using harvest limits, seasons, translocations, captive breeding, and supplementation) of vulnerable species to ensure sustainability and maintain biodiversity, human use, and other ecological functions.

Climate Impacts Addressed: Sea level rise, storm surge and saltwater intrusion

Status of Project Implementation (Timeline, Milestones, Next Steps): The first-ever reintroduction of the species was in 2012. The survival rate is about 80% after 1.5 years. Additional potential reintroduction sites have been evaluated during the past year to identify areas with suitable habitat that are at higher elevations than existing populations. Plants for reintroduction at some of these sites are being grown at the Fairchild Tropical Botanical Garden. In addition, efforts are underway to identify ways to reduce the effects of a pathogen which causes stems to rot.



NATIONAL *fish, wildlife & plants*  
CLIMATE ADAPTATION STRATEGY

Project Outcomes: Desired outcome is to re-establish new populations of this highly endangered species at locations at less risk of increased soil salinity resulting from sea level rise, storm surge, and saltwater intrusion. This is considered to be an interim measure to “buy time” for this species while additional recovery measures are identified and implemented to ensure the survival and eventual recovery of the species.

Funding Sources: US Fish and Wildlife Service, Fairchild Tropical Botanical Garden, Florida State Parks

Photos/Attachments:



Photo/Figure Credits (do we have permission to print): Yes

Suggested Photo Caption: *USFWS Botanist Dave Bender prepares ground to plant a Key tree cactus. Credit: Dave Bender/USFWS.*