

# A Guide to Saguaro Data from Saguaro National Park



## Ecotone

Climate change predictions indicated that the southwestern United States is moving towards an increase of minimum temperature and decreased frequency of freeze events. These predicted changes suggest that the geographical and elevational range of the saguaro may change. The ecotone study in 2011 established a baseline for examining these changes more closely.

## Historic Plots

Eleven study plots were established in 1941 and 1975 as a long term study of mortality and recruitment focusing on height and population density. Each saguaro that was tagged in 1975 was re-located in 2002 and 2010 using GPS units, checked status (i.e. live or dead), and/or height and number of arms were recorded.

## Saguaro Census

The Census is based on 45 plots of 4 ha each that were originally established in both districts of the park in 1990 and resurveyed in 2000. This study started with a saguaro count, checking for epidermal browning and measuring saguaro population density and structure. A third resurvey of population density occurred in 2010, without checking for epidermal browning.

## Section 17

In 1941 scientist studied saguaros in a one-mile-square section 17 to determine if a contagious disease was killing saguaros in the park's "Cactus Forest" area. Saguaros were mapped, measured and monitored. Seventy years later, in 2011 there was a re-survey of section 17 to study long-term changes in saguaros.

## Vegetation Subplot Monitoring

This project was established in 1990 and resurveyed in 2000 and 2010. The study occurred in small 10x10 meter subplots within the 45 Saguaro Census plots. All perennial species were mapped to provide insights into long-term community dynamics. Vegetation maps were analyzed for differences in species composition, density and cover through the decades.

# Reference Codes for Saguaro Monitoring Projects posted on IRMA

The best way to find the saguaro documents is Search the NPS Data Store on Integrated Resource Management Applications (IRMA) at <https://irma.nps.gov/DataStore/Search/Quick> Simply type the reference code into search text box, then select the Reference, and download the dataset, reports, or shapefile (if using internet explorer the document may be under the “*click here for more info*” link). We are hoping that researchers, college students, and even local high school and middle school students will use these data for research projects.

Survey	Title of Document	Type of Document	Reference Code
<b>Section 17 (1941 and 2011)</b>	Saguaro National Park: Section 17: Saguaro Monitoring	Dataset	2225391
	Saguaro National Park: Section 17: Saguaro Monitoring	Shapefile	2225402
	Saguaro National Park: Section 17: Saguaro Monitoring	Report	2225727
<b>Historic Plots (1975, 2001 and 2010)</b>	Steenbergh & Lowe Historic Plot Saguaro Survey	Dataset	2225187
	Steenbergh & Lowe Historic Plot Saguaro Survey	Shapefile	2225404
	Historic Plot Saguaro Survey Report	Report	2225397
<b>Saguaro Census (1990, 2000, 2010)</b>	Saguaro National Park: Saguaro Census	Dataset	2225188
	Saguaro National Park: Saguaro Census 1990, 2000, and 2010 Report Series	Report	2225396
<b>Vegetation Subplots (1990, 2000, 2010)</b>	Saguaro National Park: Vegetation Subplot Monitoring	Dataset	2225390
	Saguaro National Park: Vegetation Subplot Monitoring	Shapefile	2225403
	Vegetation Subplot Monitoring Reports	Report	2225399
<b>Ecotone (2011)</b>	Saguaro National Park: Ecotone / 50 Meter Plot Survey	Dataset	2225185
	Saguaro National Park: Ecotone / 50 Meter Plot Survey Reports	Report	2225393
<b>Plot Corners and Boundaries</b>	Saguaro National Park: Saguaro Monitoring Plot Boundaries and Corners	Dataset	2225401
	Saguaro National Park: Saguaro Monitoring Plot Boundaries and Corners	Shapefile	2225405