



UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

March 24, 1953

Memorandum

To: Regional Director, Region Four

From: Superintendent, Joshua Tree

Subject: Joshua Trees--Rate of Growth

The rate of growth of the Joshua-tree has long been a subject for discussion. Due to the absence of annual tree rings no way has yet been discovered to determine their age.

For about seven years very accurate measurements of certain trees have been made with instruments. The measurements are made on January 7 and July 7 of each year. We made a graph of the growth of each tree during each six months period. We then tried to correlate this graph with a graph of the weather conditions to see whether or not the trees were more greatly effected by the most recent 6 months period or the period of 6 to 12 months previous. The attempts with the graphs were rather half-hearted although some interesting observations were noted. We believe that several more years of observations should be made before any serious comparative data are contemplated.

Of considerable interest are the two attached pictures both taken from the same spot but 13 years apart. One was taken by Ralph Anderson in December, 1939. The other was taken by the undersigned in January, 1953 for comparative purposes.

Young Joshua-trees such as are in the foreground have been found, through the measurements every six months, to be the size that grow most rapidly. Generally we have found that the 0-10' test trees grow almost 2-3" per year. The trees in the picture are not test trees but they recently were measured for the purpose of this memorandum. The tallest (12.33') tree of the clump grew 2.15' in 13 years or about 2" per year. The tallest (7.38') tree directly in line with the pyramidal boulder grew 2.42' in 13 years or slightly over 2" per year. As the trees grow older they grow more slowly.

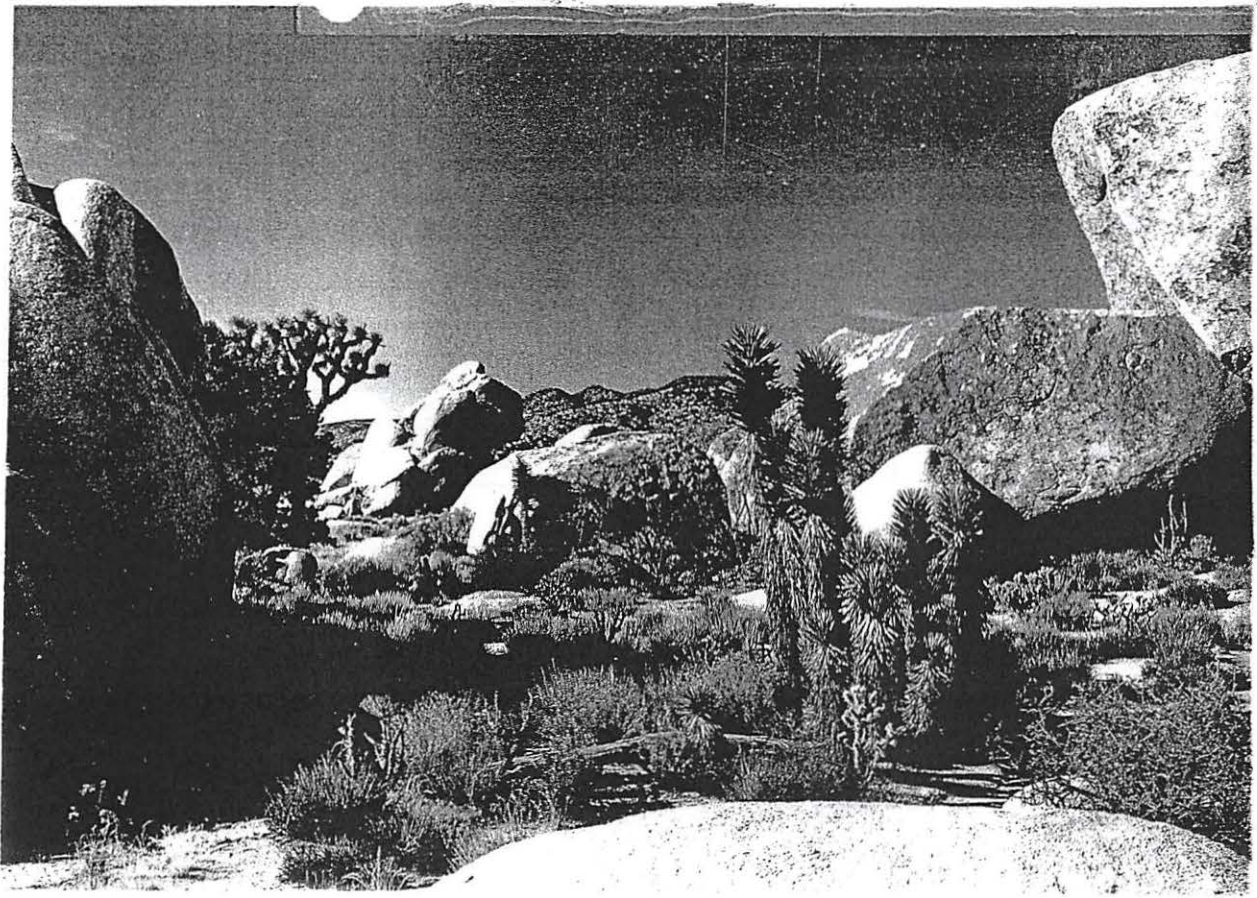


There are many other interesting observations: the prostrate limb of the Joshua-tree in the first picture is almost decomposed in the latest picture; the cholla seems to be about as slow growing as the Joshua-tree; many of the individual shrubs have persisted with little apparent change; even the individual markings on the rocks, such as the chemical reaction of lichens, remain about the same.

Joshua-trees and other desert vegetation are so slow growing that rapid reproduction is not essential, in fact, it cannot be tolerated if the desert is to remain a desert. The desert heals its wounds just as slowly and for that reason the monument should be protected from all man-made destructive forces such as the filming of western type moving pictures, etc.



Frank R. Givens
Superintendent



By Ralph Anderson, December, 1939



By Frank R. Givens, January, 1953