Eastern redcedar (Juniperus virginiana) is a highly adaptable native, north-American conifer that appears to have expanded from protected refugia to previously un-occupied land types likely in response to fire suppression and land use changes associated with Euro-American settlement of the 19th and 20th centuries in the eastern US. A dendro-ecological study was initiated in the south-central US to determine the historic density and spatial extent of eastern redcedar (ERC) in a protected, grazed, fire-maintained natural area with native oak woodland and prairie vegetation within the Cross Timbers of Oklahoma. Oldest ERC in rock outcrop areas dated back to the 13th century, while grassland and woodland ERC established primarily in the 20th century. Topographic features largely determined old ERC locations, while presence of deciduous tree cover predicted young ERC occurrence. The distribution of ERC ages refuge-wide describes an exponentially increasing population from the late 19th century through the end of the 20th century.