# Introduction

Forests make up 45% of terrestrial carbon (Bonan, 2008 and Stovall et al., 2018). The amount of carbon held in by trees can have a negative impact due to the emissions that are released into the air caused by deforestation. The rise in carbon emissions is attributed to the rise in tree mortality.

Mortality is one of the most important causes of forest dynamics [@gonzalezakre\_patterns\_2016], as it can influnce the number and distribution of woody species that are found in an area. It can also be detrimental because tree mortality can be used as an indication of climate change [@gonzalezakre\_patterns\_2016].

In 1974, the Smithsonian purchased a piece of land, known as the Remount Depot. Shortly after the purchase, the land became the Conservation Research Center.The Front Royal site of the National Zoological Park is ~1,296 hectares (3,500 acres) and combined with research and academic facilities, forestry, pastures, and animal enclosures (ASK ERIKA OR KRISTA HOW TO CITE THE CULTURAL RESOUCE ASSESSMENT - Ayers et al. 2007).