

★ ★ ★ ★ ★  
**VETERANS DAY**  
HONORING ALL WHO SERVED

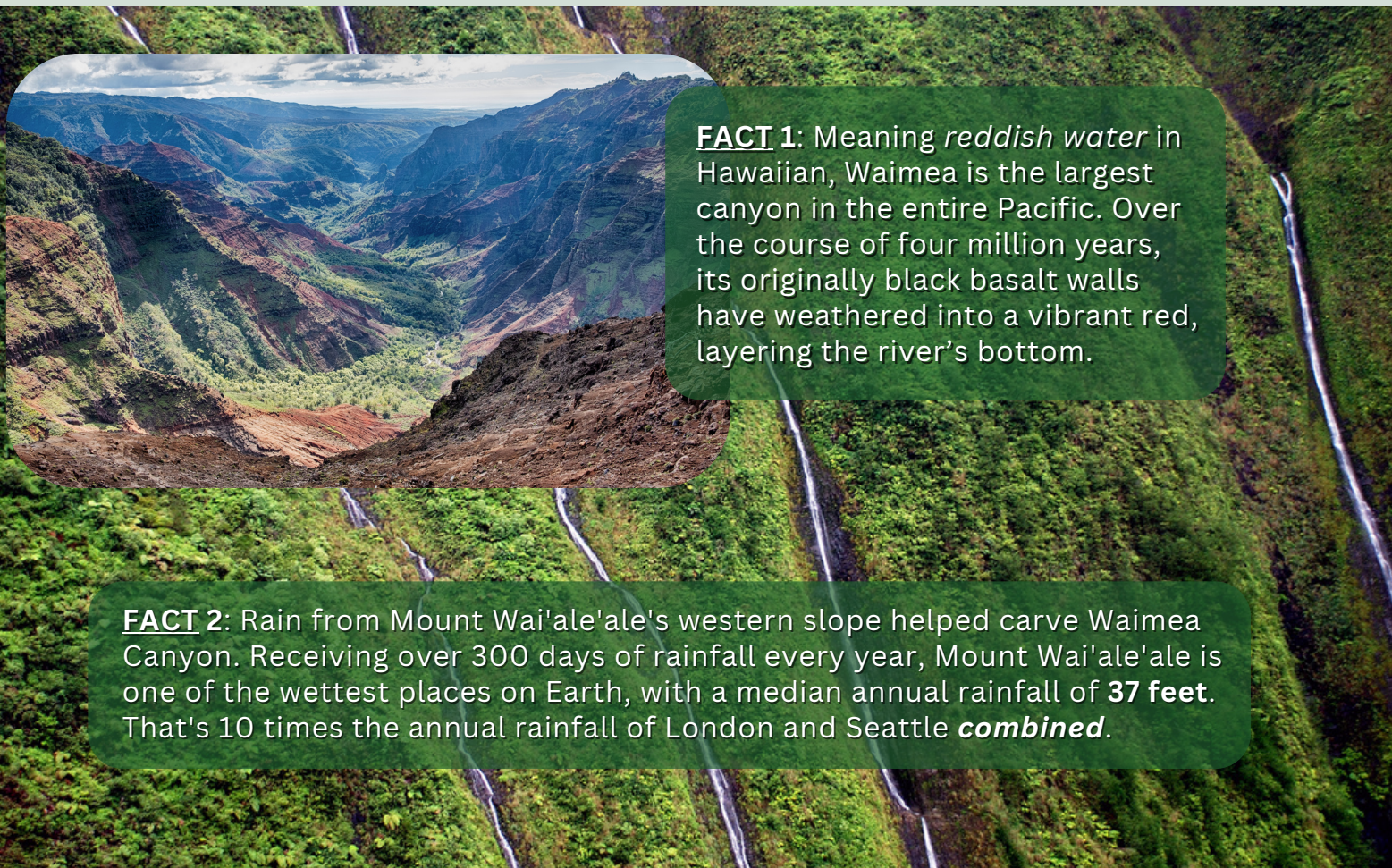
Don't forget that US military veterans and Gold Star Families automatically qualify for a free lifetime pass to access over 2,000 federal recreation sites across the National Park Service, US Forest Service, US Fish and Wildlife Service, and other federal agencies.

## FEATURED PARK



Photos and facts of your favorite parks, one issue at a time

### Waimea Canyon State Park Hawai'i



**FACT 1:** Meaning *reddish water* in Hawaiian, Waimea is the largest canyon in the entire Pacific. Over the course of four million years, its originally black basalt walls have weathered into a vibrant red, layering the river's bottom.

**FACT 2:** Rain from Mount Wai'ale'ale's western slope helped carve Waimea Canyon. Receiving over 300 days of rainfall every year, Mount Wai'ale'ale is one of the wettest places on Earth, with a median annual rainfall of **37 feet**. That's 10 times the annual rainfall of London and Seattle **combined**.

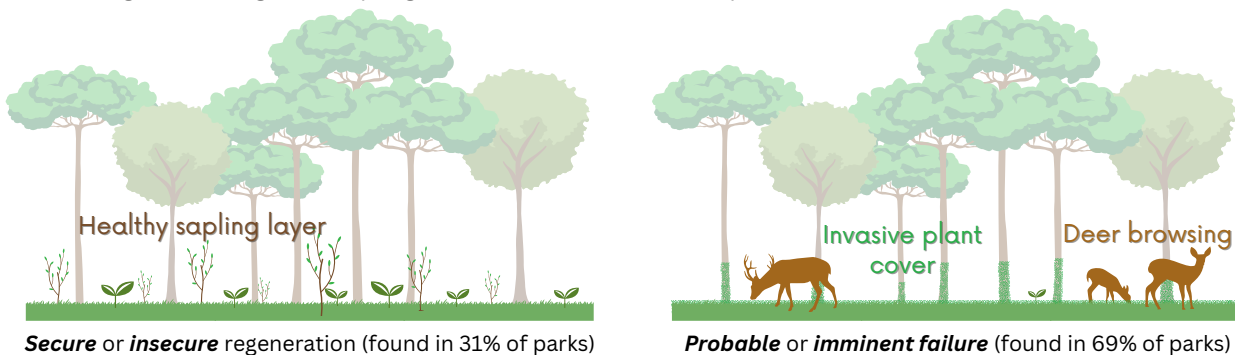
Nominate *your* favorite local, state, or national park [here](#) so our subscribers can learn about it.



While the abundance of mature trees is an obvious measure of forest health, new tree growth is a key factor as well. A March [article](#) published in the journal *Ecological Applications* examined forests in 39 eastern US National Park Service (NPS) sites to determine their *regeneration debt*, or the difference in tree regrowth between successive forest layers. The NPS research team used measurements of tree status and size over the last 12 years to estimate each park’s regeneration status. They then used a statistical model selection approach to identify the factors most responsible for gaps in regeneration.

## Forest Regeneration Debt

Accounting of seedlings and saplings in 39 eastern US national parks



The authors found that deer browsing and invasive plant cover, both of which limit the growth and density of native tree seedlings, are the two largest predictors of forest regeneration debt. In 69% of the studied parks, tree regrowth was so low that forest status was classified as either *probable failure* or *imminent failure*. Only one of the 39 sampled parks was *secure*.

The research team argues that proactive management will be crucial to the continued health of eastern US forests. Only nine of the studied parks, however, currently have active deer control programs, and continued budget cuts impede expansion of additional forest restoration efforts. Given these limitations, support for conservation in eastern US parks, many of which are less well known than their western counterparts, is more important than ever.

## PLAY GROUND

**Why aren't maple trees pictured on birthday cards?**

they're usually too sappy

## SHUTDOWN PERILS

Veterans looking to use the lifetime [pass](#) they have earned will be impacted by park closures, as will research teams, vacationers, field trip students, and even wedding couples.

**Join** the Institute's partner, NPCA, in urging Congress to prioritize our parks.