

Venerable crowns that grace the U. campus are a symbol of one man's **Tremendous Legacy**

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Rudy Drobnick spent a May day in 1954 observing birds in the Oquirrh Mountains. Descending Harker's Canyon, the University of Utah botany student grabbed an oak branch for support and found himself staring at foliage that didn't look much like the broad, lobed leaves of the scrubby gambel oak growing in Utah foothills.

He took some leaves home to share with his botany professor, the late Walter Cottam.

"Their spines were not quite as sharp as holly. They had a dentate edge and were semi-evergreen," Drobnick recalled. "I asked Doc what kind of oak that was and he couldn't identify it."

The leaves shared elements of both species of Utah's oaks, the local gambels and the evergreen turbinella oaks growing in southwestern Utah, where Cottam was born and raised, according to Drobnick, who would study the mysterious oaks as a graduate student and go onto to work for the Utah Division of Wildlife Resources for 50 years.

With the help of an eminent California botanist, John Tucker, the scientists figured out that Drobnick discovered a turbinella-gambel hybrid. The find inspired Cottam to devote his retirement to a vast horticultural experiment with Tucker, crossing various species of oak. One result was a grove of 140 experimental oaks at the mouth of Red Butte Canyon - at the site later expanded into Red Butte Gardens.

These hybridized oaks are among the impressive array of trees gracing the U.'s Salt Lake City campus, which now has 9,000 trees, representing 200 species, all of which will be central to Arbor Day activities planned Friday.

Cottam made a name for himself denouncing the livestock industry's range practices, but he had made a lot more friends and defenders at the U., where he was chairman of the botany department and planted trees from all over the world, including a newly discovered deciduous cypress called dawn redwood, previously known only in the fossil record. His on-campus arboreal research started in the 1930s at the spot now called Cottam's Gulch, a sunken area located immediately southwest of the Utah Museum of Natural History. At the time, officials were considering filling

it and paving it for parking cars, according to Dick Hildreth, the retired director of Red Butte Gardens. Exotic specimens here include zelkova, giant sequoia, catalpa, pagadotree and dawn redwood.

In recognition of the tree collection Cottam launched, the Utah Legislature designated the campus the official state arboretum in 1961 to "provide resources and facilities for cultivating a greater knowledge and public appreciation for the trees and plants around us, as well as those growing in remote sections of the country and world." Similar status was given to campuses at Utah State University and Brigham Young University.

While Cottam's obsession with trees made for a more pleasant campus, it also advanced botanical science and our understanding of Utah's natural history. The discovery of the hybridized oaks, for example, shed new light on the life history of native oaks and Utah's climate.

"What the hybrids tell us is there was a brief window about 4,000 years ago, when the climate in northern Utah was warmer and wetter," said Chuck Wullstein, a U. professor of biology who studied with Cottam in the 1960s. Turbinella, an evergreen that cannot tolerate snow, migrated north and mixed its genes with the gambels. Climate change pushed the turbinellas back south, but the hybridized specimens persisted through clonal reproduction on south-facing slopes at the "inversion zone," an elevation range between 4,500 and 5,500 feet where winter-time temperatures tend to be warmer than those on lower terrain.

Since Drobnick's initial discovery, naturally occurring hybrids have been found in 55 isolated places along the Wasatch and Oquirrh, including This is the Place State Park, just a mile south of Red Butte, where the experimental grove and the visitors center are named in Cottam's memory.

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About Walter 'Doc' Cottam

Who he was: A University of Utah botanist revered for planting trees on campus, Cottam is best remembered for helping kick-start the state's nascent conservation movement. He made plenty of enemies after his unwelcome warnings about unsustainable resource management won him the sobriquet "Puppet of Pessimism" from *The Salt Lake Tribune* editorial board.

What he did: On Feb. 19, 1947, he stepped to the podium at the U.'s Kingsbury Hall and earned the enduring enmity of a cattle industry that wanted to believe range degradation was the result of drought. Cottam, who died 20 years ago at the age of 94, delivered *Is Utah Sahara Bound?* for the prestigious Reynolds lecture as Utah was celebrating the centennial of Brigham Young's arrival. He argued that overgrazing was destroying Utah's delicate ecological balance, threatening to turn the valleys into a wasteland reminiscent of North Africa, as opposed to the blooming garden Mormon pioneers envisioned.

His research: A half-century earlier, Utah stockmen had turned millions of sheep loose on the public domain, leaving a legacy of flooding and erosion, the scientist said. Cottam's research compared range quality in adjacent canyons east of the U. He found 10 species of native grasses were absent from the grazed Emigration Canyon and thriving in the Red Butte Canyon, which had been closed to grazing.

"Can this civilization of ours, situated as it is in a semi-arid land, look with compliance to a permanently productive future when history speaks so repeatedly and so eloquently of the failures of Old World," Cottam said. "Must history repeat itself? Are we destined to follow the short road to glory and the long, painful road to poverty and decay that Mesopotamia, the Holy Land, Alexandria and Greece followed?"

A short time later, church authorities met with U. President Ray Olpin, complaining about the scientist who dared castigate range practices of Mormon ranchers. Cottam had already run afoul of church leaders while teaching at Brigham Young University, his alma mater, where his disaffection with Mormon teachings prompted him to move to the U. in the 1930s, according to his 1999 biography *Why Hurry Through Heaven?*

"He was always telling it like it was with overgrazing and gully formation," his student Rudy Drobnick said.