

# IS UTAH SAHARA BOUND?

BY KEN SLEIGHT

*EDITOR'S NOTE: Ken Sleight made these observations about the drought in the arid West and the need for sustainable range practices more than a decade ago, in the printed Zephyr, long before Global Warming became a part of our lexicon. We offer his observations here, for the first time online.*

*Also, I urge all my readers to email Mr. Sleight and tell him to get back to his computer and start spinning some more yarns for The Zephyr...JS*

On Feb 19, 1947, Dr. Walter Pace Cottam, a professor of botany at the University of Utah delivered the distinguished annual Frederick William Reynolds lecture during Utah's centennial settlement year. His subject: Is Utah Sahara Bound? sent shock waves through Utah's ranching and farming communities. It must have taken great courage to accomplish what he did. The University published his remarks in bulletin form and opponents as well as supporters studied these in detail. Like a bombshell, the fallout continued for months.

In my senior year of high school that same year, I gave a talk too at a Future Farmers of America state function in Salt Lake City entitled "Contour Plowing," a short piece about preventing soil erosion on farm lands. We had already discussed the Cottam address because of its far-reaching impact. After our session, some of us were ushered to the University of Utah where we strolled about the campus and among its beautiful lawn and tree-covered grounds. Ivy crept up the walls of its old buildings. I was so impressed I decided to enroll at that venerable old school. I secured my own personal copy of Cottam's speech. He begins: "Could we but turn back the clock of time one short century and on the morrow's dawn gaze out over this valley asleep in the morning shadows of the Wasatch Mountains, we would see no human habitation, perhaps a few scattered teepees of the red man -- no streets, no trees, no smoke. The thought is incredible." At first, I wasn't aware of his speech's continuous impact. Ranchers from across the state criticized him severely. According to Maxine Martz's Cottam biography, *Why Hurry Through Heaven*, the irate stockmen wanted Cottam fired from the University, but University president A. Ray Olpin refused to do so.

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I enrolled in the University that same fall, and I intended to take as many natural resource courses as I possibly could. Eagerly, I signed up for Dr. Walter P. Cottam's botany class. Cottam became one of my most influential and inspirational professors. He was a tough and exact teacher. He rightly flunked me, after warning me, for cutting too many of his student-assistant lab classes. Rather than attending them, I headed for the trails of the nearby mountains. Though the lab didn't excite me, Cottam's lectures certainly did. One day, the esteemed professor led our class on a little walk into a shallow gully behind the Thomas Library (now the Utah Museum of Natural History). There we viewed the lofty trees that he himself had planted -- cottonwoods, live oaks, a pagoda tree, a sequoia, and a host of others. He had hybridized some of the oaks that he had planted by crossing southern Utah's live oaks with Gambel oaks. This produced more hardy oaks that reportedly held their leaves through the winter. At one time the University had thoughts of filling in that gully, but Cottam protested and took it on himself to plant trees in it. His hallowed site became reverently known thereafter as "Cottam's Gulch."

During my venturesome five years at the University, I'd often head for that tranquil setting, my arms loaded with challenging lessons and library books. His provoking lectures often focused on his own revealing work, *Is Utah Sahara Bound?*. His lectures and the lessons he taught have stayed with me these many years. I still have a copy of this masterpiece, which deals with the effects of graz-

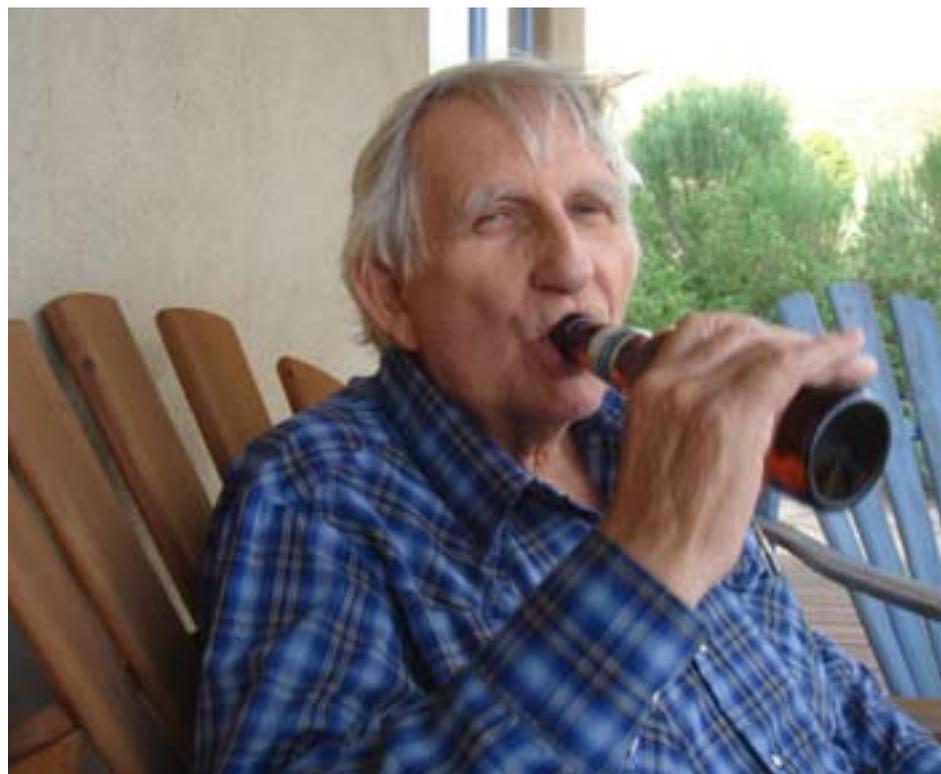
ing on the arid lands of Utah.

What was it that Cottam wrote that made the stockmen so hostile to him? After all, he was one of their own - having been born of rural Mormon parentage in the St. George area. He wrote:

A hundred years of struggle against nature in Utah suggests ultimate defeat for man unless more brains as well as brawn are used in the battle. For we have seen many of our springs shrink in volume and some of them fail entirely to discharge their precious liquid. We have witnessed the denudation of our mountain slopes through fire, poisonous gases and unregulated grazing and then like whimpering children have bewailed the cruel devastating floods that have followed these abuses. We have seen our sparkling mountain streams run red with silt and become sterile of aquatic life . . . It seems incredible that a full half century of intermittent but devastating floods has not taught an intelligent people the obvious relationships between vegetation, soil, and water.

Several different types of native grasslands were once common in the semi-arid southern Utah. The pronghorn antelope serenely grazed upon them. However, upon the introduction of cattle and sheep, it took only about 10 years or so to overgraze these sensitive lands. With, the natural ecosystems altered, cheatgrass aggressively invaded the former grasslands. And the big sagebrush, a hardy and cold-tolerant shrub spread out over wide areas to dominate much of the ecosystem.

During the decades of the 1880s and 1890s there was a tremendous upsurge in sheep population in Utah. The grass-covered mountain ranges of the Wasatch, the Uintas and the high plateaus were overgrazed, and sheep trailing did much damage to the watershed areas. As Cottam noted, from far off one could detect numerous herds of sheep by the clouds of dust created by their many hoofs. He



Drought or no drought, KEN SLEIGHT likes to wet his whistle from time to time.

condemned the extravagant and unbridled exploitation of the plant life resource, and he pointed out how the towns of Sanpete County had been hit with the fury of ravaging floods. "Truly the fathers' sins against the land are visited upon their children for generations to come, especially when the children continue in the same transgressions," he said. This statement was born out by the disastrous flood at Mt. Pleasant in July 1946.

He emphasized the fact that in 1903, after the Manti National Forest had been created, the federal government needed to take steps "to protect these people from themselves." It banned grazing within the entire Manti Creek watershed for a number of years. By using data he collected from Mountain Meadows in Washington County, at the infamous Mountain Meadows Massacre site, he ably illustrated the ecological catastrophe caused by livestock on those delicate meadowlands. The area is still in jeopardy to this day.

The Great Basin deserts weren't so green after all, he said. The deserts weren't "blooming as a rose" as we had all been led to believe in the overblown oratory given in public and church meetings. He revealed to us the processes of range destruction and the extent of damage it inflicted. It all occurred within two or three decades after initial Mormon colonist settlements. The new settlers were ignorant of their impact upon the land. For the years between 1847 and 1937, he cited strong data that native grass cover in Utah's Great Basin went from 45% to nearly zero. Sagebrush increased from 1% to 11%, rabbitbrush rose from 1% to 13%, and the juniper-pinyon cover increased from 10% to 38%. Star-

ting figures.

He showed us that rapid storm flooding erodes and carries away increasingly great quantities of soil and sediments. This material inevitably must come to rest and displace the storage capacity of our reservoirs. In the creation of reservoirs, he asked that same question many of us today are asking. "When our reservoirs are filled with silt what then?" The soil mantle he said was the natural reservoir for water. Overgrazing destroys this protective mantle.

During the past years, the cattle industry in Utah has gained great influence and power. The question of the times - as it is today - was who should control the public lands. Should grazing lands remain under federal control and oversight? Cottam thought so. In any event, the desertification of Utah continues. Cottam's



**THE RECENT AUSSIE DUST STORM**

In this satellite image of the east coast of Australia, an unprecedented dust storm, blowing east from arid rangelands to the west, tured skies blood-red and in this photo, the dust can be seen extending far out into the Pacific Ocean...

A portent for the American Southwest?

In recognition of his work, in 1961, the Utah Legislature named the University of Utah campus as the State Arboretum of Utah. This 1,500-acre arboretum is said to have over 9,000 specimens of trees and shrubs collected from around the world. His collections, housed at the University, include color slides of many varieties of plants, trees, and flowers from varied locations in Utah and the West. And his papers, ripe for research, contain years of collected news clippings, reports, and correspondence.

Cottam certainly had a great lasting influence on my life, much more than I can relate here. And as I stroll even today to the peaceful Cottam's Gulch, following a stone pathway leading to his treasured trees, I still warmly feel its charm and tranquility. There I ponder on Walter Cottam and the great legacy he left us. He was a man who tried to teach us all - to both the faithful and unfaithful, the believers and unbelievers - the ecological principles he so wanted to pass on.

References:

Cottam, W. P. and George Stewart. 1940. Plant Succession as a Result of Grazing and of Meadow Desiccation by Erosion Since Settlement in 1862. Journal of Forestry 38: 613-626.

Cottam, W. P. 1947. Is Utah Sahara bound? University of Utah Bulletin 37: 40.

Martz, Maxine, 1999. Why Hurry Through Heaven? A Biography --- Memoir of Dr. Walter P. Cottam, Red Butte Garden & Arboretum, University of Utah, Salt Lake City, Utah

Internet Link

Red Butte Garden [www.redbuttegarden.org](http://www.redbuttegarden.org)

influence has been tremendous and his accomplishments great. He left a remarkable legacy. He was an environmentalist and ecologist of the highest order.

He founded the beautiful Red Butte Garden, a part of the University of Utah, one of the largest botanical and ecological centers in the Intermountain West. It has over 150 acres of gardens with walking paths leading to them. Regional horticulture is displayed and interpreted. And during the year the center promotes concerts, festivals, and nature outings. A portrait of Walter Cottam, by master portraitist Alvin Gittins hangs there. He founded the herbarias at the University of Utah and at Brigham Young University. Hundred of thousands of herbaria specimens are now available for research and study.



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