

King Ranch Bluestem  
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Before retiring about five years ago Bill Donham, the NRCS District Conservationist in the Weatherford field office, had given me a handful of old Soil Conservation Service 35mm glass slides. I guess that is how the old ones were assembled with glass on either side with a thin band of tape around the sides. I scanned a few of these and this image is one that I liked. I didn't know what year it was taken but was guessing early 1950's by the Khaki clothes and hat style. Also, I didn't know what species of grass this was with the very impressive root system. I emailed the photo around, but no one was certain of the identification. In December 2016 the Parker SWCD celebrated the District's 75<sup>th</sup> anniversary and the district clerks had been going through old photos and newspapers getting photos to put in a PowerPoint to show during the December monthly meeting. I was in their office and they pulled a 4x5 inch photo out of a stack and said, "How do you like this picture?" I immediately recognized the photo as being the unidentified grass on the barn wall from the old slide. I flipped it over and sure enough in that comforting old blue ink was typed this information:

**SCS Nursery, San Antonio, Texas, Alamo SCD**

**Tex 46-102 10-4-49 This King Ranch bluestem plant has a root system nine feet long. One of two plants dug up at nursery for exhibit at Dallas State Fair, its roots penetrated through caliche. Other plants had roots more than 11 feet down, plant was three or four years old when dug up, having grown from seed that took root after being blown from a bluestem planting about 200 yards distant. David Foster, nursery manager, holds measuring rod along plant.**

**Orig. Neg 4x5 USDA-SCS Photo by Lester Fox**

In that brief description of the photo there are several important facts that help to explain how King Ranch bluestem has become so dominant wherever it has been planted:

- "The roots penetrated through caliche", tenacious and impressive for plant roots, especially non-woody roots.
- "Plant was only 3-4 years old" and look at the extensive root system it produced in only 3-4 years.
- Most impressive and helping to explain how it spreads is that seeds from a planted test area of KR travelled about 200 yards and established new plants. This grass can march across a pasture from seed that gets started in bar ditches and from old grass seed mixes containing both native and introduced plants.

KR bluestem is a warm-season, deep-rooted bunchgrass that is adapted to most soil types in Texas. The lower stems and leaves often lay flat just above the ground turning upright at a node. Livestock are able to consume all of the upright growth, yet the plant maintains enough leaf material to continue photosynthesis even during severe over grazing that causes many natives to wither and die. A tougher adversary for native Texas plants would be hard to find in the state.

I confess, in my early years with SCS and NRCS I added KR to seed mixes because it was the normal thing to do: it was easy to establish, cheap to buy, always available, everyone else was recommending it and it was adapted to many soil types. I have not recommended it for including in mixes for at least 15 years because of its invasive nature. I'd suggest if landowners insist on an old-world bluestem in a mix to use WW Spar, Ironmaster or the newer B dahl bluestem or a

variety that fits your area of the state. KR is arguably the most invasive of these old-world bluestems. Read up on these different species as not all of them will do well in certain soils.

From page 3 of the very first issue of the Reverchon Naturalist, available at this link, comes this information about KR bluestem:

<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/tx/technical/ecoscience/bio/?cid=nrcseprd33829>

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*From **Grass Varieties in the United States**, pp.20, the material now known as King Ranch bluestem was received on January 11, 1917 by P.B. Kennedy, Agronomist, AES, Berkeley, CA from H. Hoyle Sink, American consul, Amoy, China. Seed arrived in Angleton, Texas in 1924, Washington, D.C. in 1932, and Oklahoma AES, Stillwater, OK in 1937. In 1939, given the name yellow beardgrass in Texas AES Bulletin No. 570 and its performance at Angleton described. In 1949, given the name Texas yellow beardgrass and released for certification in Texas by Texas AES. All material furnished by Texas AES to individuals or substations since 1941 originated from this source. Since original Chinese material had been grown at substation 3, Angleton, Texas, as early as 1924 there is little reason to suppose that King Ranch is any other than a Chinese accession that found its way from Angleton to King Ranch sometime during 1924-1937. Material now generally in use was first noticed by Nico Diaz on the King Ranch in 1937.*

So, KR had been in Texas no longer than 25 years at the time of this photo, it was a new and exciting grass for forage production for livestock, remember all plant materials work being done in this time frame was for forage grasses for livestock and a few plantings of woody plants for erosion control. This grass arrived on King Ranch during the great depression and to the north during the infamous Dust Bowl. I'm not sure how much impact the Dust Bowl made in Deep South Texas, but it likely had landowners looking for new forage plants as well. Then the Drought of the 1950's hit all of Texas hard and vegetation was again hit hard and slow to recover when it did begin to rain in 1956-57. Steve Nelle, retired wildlife biologist with the Natural Resources Conservation Service in San Angelo, has told of ranchers near the end of the 1950's drought in the Edwards Plateau and South Texas riding horseback in pastures with a tow sack of Old World bluestem seed throwing it across the pastures to try and get something to grow and hold the soil down. As in most things in life there are two sides to every story. One landowner in West Texas told me "I can't complain about a grass that is eaten well by cattle and adapts to the more arid parts of Texas and New Mexico. To these areas it is a valuable part of a cow's habitat."

How times have changed and now King Ranch is the scourge of the grass world owing to its ability to invade and dominate the vegetation in a pasture but not provide a large quantity of grazing value. I once asked a former wildlife manager of the King Ranch, if King Ranch still referred to the name King Ranch bluestem when describing the grass and he said, "No, it is now called Old World bluestem", so even the grasses namesake has denounced it.

We should learn from the lessons that KR bluestem has taught in the past 90 years. What several state and federal agencies along with thousands of conservationists and hundreds of thousands of landowners and managers, with current knowledge of the time and good intentions has spread upon the prairies and plains of Texas will be something we will have to live with for decades. What made KR so good is also what makes KR so bad. Who knows what will be the next introduced grass that turns invasive.

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Photo captions:

1 This 1949 photo shows David Foster, manager of the old SCS nursery at San Antonio measuring the root depth of KR bluestem.



2 This unmarked 35mm slide shows an impressive root system of a grass that has taken Texas by storm.



3 This scene is repeated across many acres of Texas showing the domination of KR bluestem, in the original seeding mix KR might have made up only 25% of the grasses seeded.



4 A small patch of buffalograss near center of photo is resisting the advance of KR bluestem.



5 Once the seedhead shoot up toward the sun the plant is mostly stems with the leaves remaining closer to the ground.



6 Numerous seeds are produced on a single seedhead. These seed heads can be mown down and a new seedhead is reaching skyward with 10 days.



7 Driving across Texas in the fall reveals the maroon haze of KR bluestem as seen on the roadsides and pastures.

