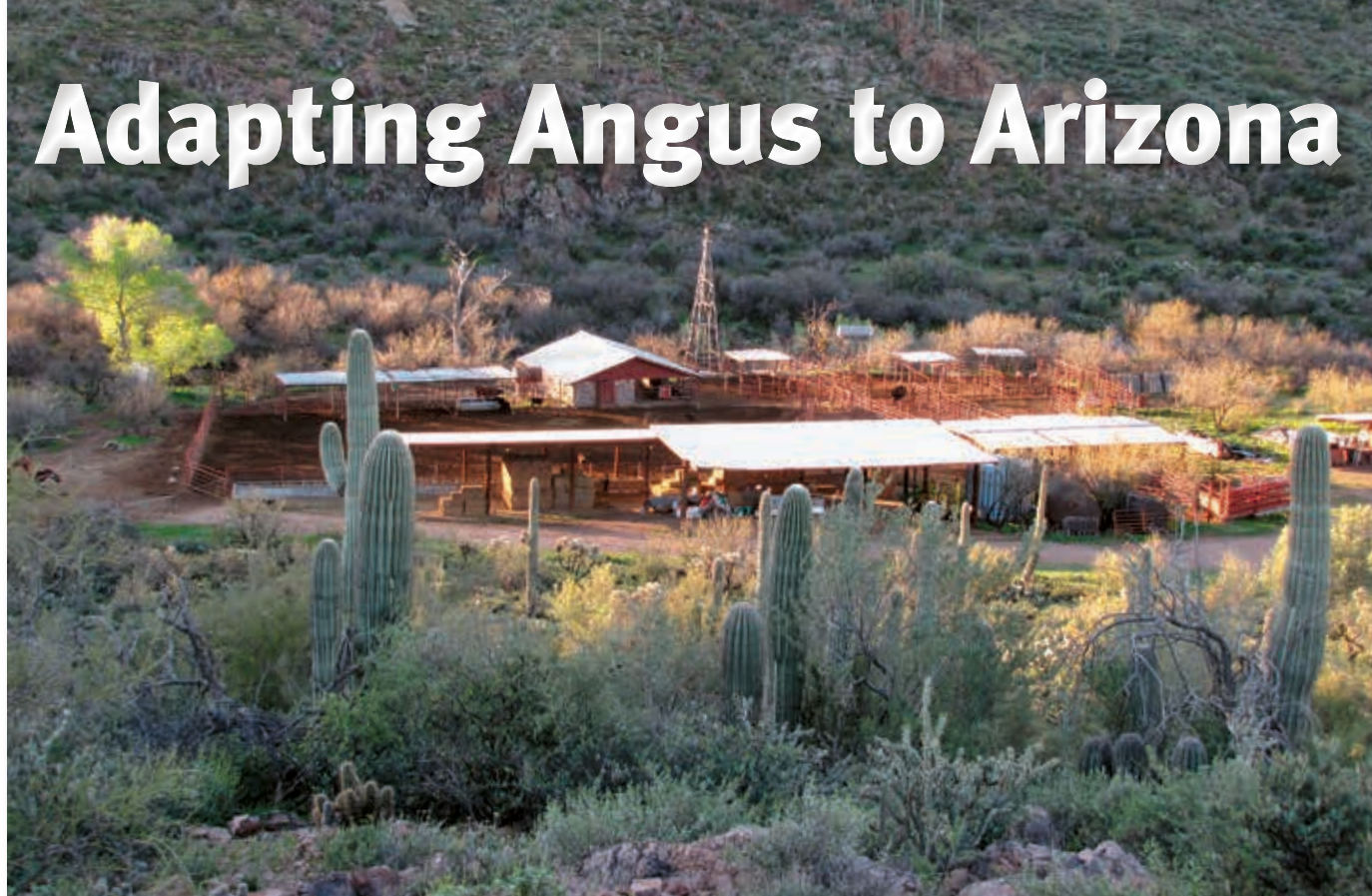


# Adapting Angus to Arizona



**“All life is an experiment — the more the better.” — Ralph Waldo Emerson**

*Story & photos by Steve Suther, Certified Angus Beef LLC*

**T**he difference between a dream and achievement is informed action. Chuck Backus knows that and lives it on his family’s ranch in the Superstition Mountains east of Phoenix, Ariz.

That difference is what brought Backus from Ohio to higher education in the Valley of the Sun in the 1960s. It compelled him to apply his nuclear engineering doctorate in the space program’s Mars mission back East before returning to lead Arizona State University’s (ASU) solar-energy initiative.

Backus and wife Judy raised a family in the area while an academic career took off for 36 years, fueled by his penchant for informed action. He helped start the world’s premier solar-testing laboratory and served first as ASU associate dean of research and then founding provost of the ASU polytechnic campus.

With a background closer to rocket science than animal science, the ranch connection may seem disjointed. However, the scientist was always an avid outdoorsman, hiking and climbing in his adopted state, and getting to know the history and people of the range.

Still a West Virginia farm boy at heart, Backus had been looking for a place where he could reestablish those connections to

the land. Then, in 1977, a 10-acre tract came onto the market with a 22-section grazing lease of Arizona State Trust Land. He only had to take over the payments to acquire it.

“It was 45 minutes from my house,” he says, “but it was going to be much more than a hobby place as I looked down the road.”

## **More than a hobby**

It turned out that it was the headquarters of the Quarter Circle U Ranch, where the first operators claimed unlimited desert acreage for their 5,000 cattle in the 1800s. The ranch house was built in 1876, 10 years before Geronimo surrendered.

In modern times, the adjoining crags and cactus are featured in several Hollywood movies and, more importantly, rated for 207 cows year-round. No motorized vehicles could venture into that realm.

Backus jumped into ranching with both feet to take on such a lease as a sideline to

► Leading the Arizona State University’s solar-energy initiative, Chuck Backus enjoys learning by doing with new technology on the ranch.



his high-profile ASU career. He saw the dream opportunity to learn by doing while trying new technology.

Oil companies were the main players in solar development, and several of them asked if he could find a use for experimental photovoltaic modules after testing.

“I said sure. A storm had wrecked our one windmill in 1979, so we set up a solar pump there,” Backus recalls. Then he linked solar panels with dozens of golf-cart batteries and a big inverter for full 110- and 220-volt AC on a ranch 7 miles from any electrical line.

When the United Nations hosted seminars on solar energy around the world, the professor from Arizona transfixed audiences with documented practical applications. Even his cows were solar branded then, although later experiments convinced him to adopt freeze branding.

**I N N O V A T I O N S**



► **Left:** Still a West Virginia farm boy at heart, Chuck Backus had been looking for a place where he could reestablish those connections to the land. Then, in 1977, a 10-acre tract came onto the market with a 22-section grazing lease of Arizona State Trust Land.

“I sat in on all the courses Arizona State had in range management and animal science,” Backus says. Meanwhile, there was a lot of learning by experience, even among the cows.

For starters, he had to buy some pairs from the former owner’s rodeo-supply herd just to show his first Brangus cows around.

“What to eat, where to drink — but, oh, they were wild, wild cows,” he says. Hired cowboys later gathered as many of the originals as could be rounded up, but eventually a renegade few had to be hunted like wild game.

The new herd seemed to be working, but Backus focused mainly on range

improvement and water development. That included pumps, pipe and tanks to tap into the dynamited fissures a hired specialist had applied to dozens of seeps across the leased sections in 1891. Any improvements had to arrive by packhorse.

In the 1990s, already recognized for achievement by the Society for Range Management and the USDA Natural Resource Conservation

Service (NRCS), Backus was concerned that improvement was stalled.

“They pointed out this is a high desert, and we can only expect so much — unless we could give it more rest,” he says.

Looking for answers, he found a small tract for sale with a grazing permit on 40 sections of U.S. Forest Service land in the White Mountains at 7,000 feet and 160 miles north, near Show Low, Ariz. It was rated for 450 animal units from May through October, and since the local state lease flexed to allow double stocking when cutting duration by half, many new doors were opened. Backus purchased nearly 100 Beefmaster cows as part of that deal.

The Quarter Circle U Ranch began sending pairs north every summer in 2000, and that led to a new acquaintance with



► **Above:** “I sat in on all the courses Arizona State had in range management and animal science,” Backus says. Meanwhile, there was a lot of learning by experience, even among the cows. “There’s still so much I want to learn,” says Backus, nuclear engineer turned cowboy.

► **Left:** The new herd seemed to be working, but Backus focused mainly on range improvement and water development. That included pumps, pipe and tanks to tap into the dynamited fissures a hired specialist had applied to dozens of seeps across the leased sections in 1891.

► **Below:** With more rest than it had seen in 150 years, warm-season grasses flourished there amid the cactus and jojoba, ungrazed until dormancy in November.



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trucker Dean Harris, who would later sign on as ranch manager for the family.

### Aiming for quality

Nine years ago, Backus retired to a more active life of full-time ranching with a

summer cabin and ranch office on the north place and a manager at the headquarters. With more rest than it had seen in 150 years, warm-season perennial grasses flourished there amid the cactus and jojoba, ungrazed until dormancy in November.

The herd grew to near its 400-head capacity while ramping up beef quality as a new feature, always guided by scientific trials and data.

A 1980s experiment as a cofounder of the Arizona Natural Beef brand (no quality requirement) had the rancher rethinking consumer demand even as the environment waved its red flags when it came to investments in better bulls for service in pastures better-suited for rattlesnakes.

“I still raise the calves with a natural protocol, but it’s a whole different world with high-quality beef as the main target,” Backus says.

At first, he hoped to ease into that with two Hereford bulls to get black baldies from the Brangus: “But one literally starved to death, and we were able to get the other one in for salvage.”

Each new bull’s need to learn survival greatly increases mortality risk, and the terrain makes lameness a common problem for what was a battery of 25 or more. Planning for profit, Backus restricted the breeding season and excluded the roughest country.

The tighter calving window and closer management led to retaining ownership for feedlot and carcass data, but a load of steers sent to a Texas yard in 2006 managed just 50% low-Choice.

Cows were performing well. “Their calves looked good, but they just couldn’t grade,” Backus says. “I tried timed AI (artificial insemination) to Angus bulls that year to see if it would work here; to my surprise we got 45%,” and since then, up to 63% success.

That was a game changer. Bull needs were reduced by more than a third, homegrown replacements got their chance to thrive, and carcass quality skyrocketed as marbling and calving ease led the list of selection traits. By 2012, the increasingly Angus calves achieved 92% Choice or higher, 12% Prime and 70% with enough marbling to qualify for the *Certified Angus Beef*® (CAB®) brand.

The transformation was working according to plan.

“If I use primarily AI to bring these super genetics in, and they’re raised by my cows on this pasture, and they get all the enzymes in their system that will let them eat what is here, cactus included, and they learn what they need to eat,” Backus says, “then they

# I N N O V A T I O N S

## Around the bunkhouse

Chuck Backus retired as a provost of Arizona State University in 2004.

“That was only so he could turn his full attention to this ranch,” says Judy, his wife of 55 years. For many of those, she was in the real-estate business in the Phoenix suburb of Gilbert, where the couple maintains an all-solar home. Daughter Beth operates the real estate business now.

Another daughter, Amy, and husband Mike Doyle, work in Scottsdale, but also hold a percentage interest in the Quarter Circle U Ranch herd.

They still like to get together for grilled steaks on the streamside patio behind the ranch bunkhouse with ranch manager Dean Harris and his wife, Kris, who maintains the computer-sorted herd records.

Eddie Christopher, a retired “vet tech” and horseman who has been in on roundups for no pay since the 1970s, sometimes stops by with high-school or college-age helpers.

Harris was a livestock trucker raised on a dairy farm near Bristol, England, who traveled the European continent until the epidemic his countrymen dubbed “mad cow disease” convinced him to head for his wife’s home state.

“I know every ranch in Arizona that has a load-out chute,” he says, “but when I had a chance to settle down here, it was like another dream come true. With Chuck, I’m not just a cowboy but a modern one on horseback. The people back home find all this hard to believe.

“And dealing with every other rancher from here to Texas and Mexico, I compared them. I knew Chuck was patient and his word is his bond,” Harris says. “Other guys called and wanted a truck *now*, while Chuck would give months of notice. We started trying to haul 250 cows north in two days, but he was flexible in evolving that into 10 days or so now for the larger herd.”

Conversation may turn to the desert flora and fauna all around, or faces in the rocks at places like Mad Cat Pass, the bear scat around prickly pears in season — which you never want cows to get started on because they’re addictive; the grassy pinnacle where only bighorn sheep have grazed, and the rock-carved dates going back to 1580 atop Woman’s Head on the ridge just over there.

Judy hollers out, “Supper’s ready!” like some long-ago camp cook. Family and friends grab a beer or other beverage and line up for chuck. The meal, that is.



► Both Backus daughters are still involved in the family businesses. Amy (left) and husband Mike Doyle hold a percentage interest in Quarter Circle U Ranch. Beth (right) took over Judy’s (center right) real-estate business.

should be well-adapted as replacements. If they fail, it should come back to genetic reasons.”

That’s why he spends months each year analyzing and picking bulls by the numbers, and it’s one more reason he turned to the Angus breed.

Accurate calving ease is an absolute need because no birth on the huge ranch has been attended in 36 years. The determination to add marbling ability similarly called for Angus.

Backus appreciates the “predictable database,” and finds the custom of publishing photos of cattle nearly useless. He recounts how it worked to his advantage when the only reason one AI sire was available at a discount was that the company had no photo to share.

“I don’t know if the calves look any better than the bull, but they are working here,” he says. “I’ve been putting the best genetics I can find to work in my herd, going slow with my own replacements and seeing if they can fare well in this harsh environment.”

Up to 80% of cows are AI’d in March and April, and those with no calf by the May 1 trucking deadline are sold. When the herd returns at the end of October, some calves are 10 months old and have weaned themselves. Backus still records weights for all animals and recently began analyzing weaned calf as a percent of cow weight.

“The actual figures range from 40% to 70%, but we’ve got the last two years run with adjusted weights, which narrowed them up a bit,” he says. Efficiency is the next wave of genetic improvement, and the last nine bulls purchased excelled in the trait of residual feed intake (RFI), while keeping marbling and calving ease above breed average.

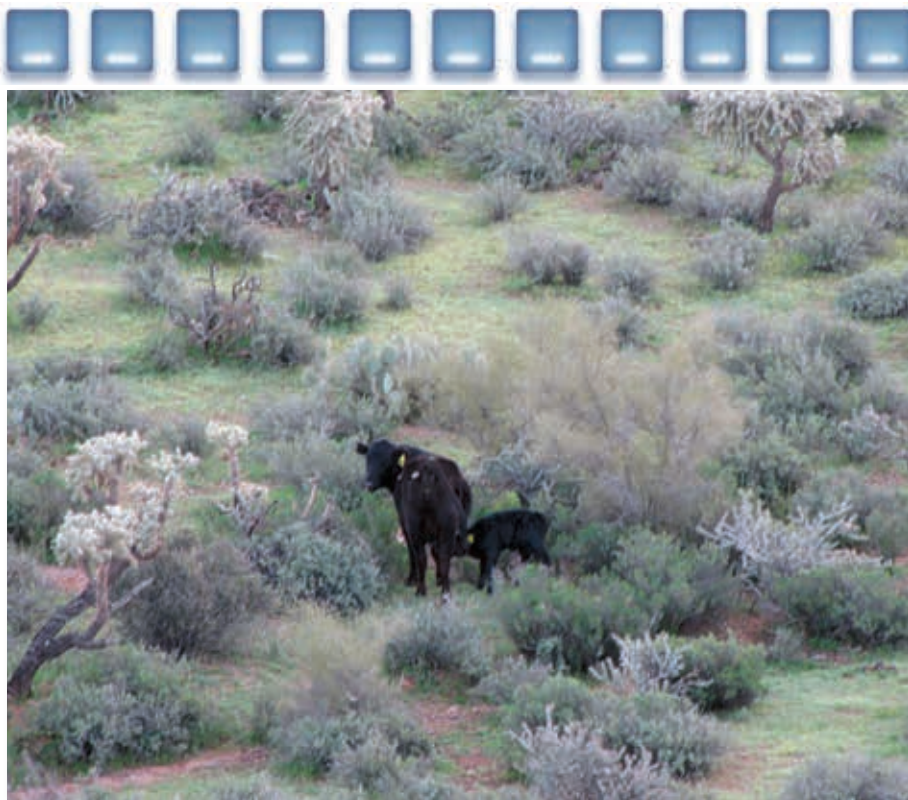
## Hitting the mark

Calves stay in the backgrounding pen on a hay-based diet for 30 days before going 120 miles south for a couple of months with a grower on the San Pedro River. Heifers stay there till AI breeding April 1, but steers go to Cattleman’s Choice Feedyard, a CAB partner yard near Gage, Okla.

Manager Dale Moore appreciates Backus as a customer.

“He knows what he wants and how to get there,” Moore says. “I don’t know a lot about the cattle yet [pending the 2013 closeout and carcass data], but I really want to get out there to see the ranch, get to know the herd and help build that program.”

Only the top load made it to Oklahoma this year, with most sold at a Texas auction. But Backus recalls Moore pointing out, “The



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calves weren’t all born on the same day, so why should they have to sell on the same day? He’ll sort into the grid, and it makes sense for us to send more or all of them next year.”

More feedback should help keep the herd on track in the new quest to add efficiency besides quality.

“We’re starting to cull cows with Select calves, too,” he says. “We have a black-whiteface Angus calf from a Beefmaster that we’re going to keep to see how her calves do, even though that dam had a Select calf. She may start with a strike against her.”

Heifers call for another experiment, of course. Last year was the first time some were managed apart from the main herd in a relatively sheltered section just above the horse pasture.

“We kept tabs on them and put out protein and mineral tubs as needed,” Backus says. “I think they did better, although we still had one or two calves killed by lions — that’s part of it out here — but they seemed to be in better condition when we brought them out. Now we’ll see how they raise their calves and breed back; if it’s a significant difference, we’ll find a way to keep all the heifers separate through calving.”

No mature heifers have died calving since the ranch began using Angus bulls

backed by data. Across the entire herd, those native jaguars claim perhaps 5% each year. Motion-sensor cameras in recent years have photographed four different ones, but those did not include four killed just this spring, two near the bunkhouse. The cameras also caught a bear taking a bath in a water tank, but predation is unknown. Rattlesnakes rarely kill a calf, but many cows show neck scars.

So far, the  $\frac{3}{4}$  and  $\frac{7}{8}$  Angus heifers seem to be doing as well as any other cattle. You can bet that is monitored.

“This herd is getting blacker all the time, but that’s just appearance,” Backus notes.

“The heifers I keep back now, I look at the carcass data from her mother the previous year. I am on the verge of GeneMax™ DNA testing on the heifers, but we’ll also cull on that calf-per-cow weight ratio. We’re only a little more than halfway through this 10-year experiment to see what Angus can do here.

“There’s still so much I want to learn,” he says.



**Editor’s Note:** Steve Suther is director of industry information for Certified Angus Beef LLC.