

methods for working cattle in big, rugged country, where it takes up to 45 acres to support a cow-calf pair. But that hasn't kept Bell Ranch managers from adopting new technology.

Back in the 1950s, then general manager George Ellis moved beyond visual appraisal of seedstock to base selection on performance. Ellis pioneered the use of 205-day weights to evaluate growth among the ranch's purebred Hereford cattle.

Back then, the company maintained a registered herd to raise its own breeding bulls. Once again, the ranch is producing its own bulls, as well as all of its replacement females. However, during the 1990s, a composite seedstock herd was developed. Seeking cattle optimally suited to the arid climate and scarce forage resources, the Bell Ranch created a blend of English and Continental genetics, with a touch of Brahman.

"We were most interested in having trouble-free cows that were adapted to this environment. It's rough and rocky, but it grows pretty strong grass when we get a little rain. The cows run on range all year round, with supplemental cake (range cubes) when they need extra protein," says Keith Long, who with his wife, Bonnie, manages Bell Ranch's seedstock division.

"An 1,100- to 1,150-pound cow is big enough. She has to calve on her own, so we put a lot of emphasis on low birth weight. To breed back on time, she can't milk too heavily, but we still want her to raise a calf that will grow," Long adds.

Since finding the desired biological type, Long says, the seedstock herd has been closed to outside genetics. But rather than focus on the Bell Ranch composite, the purpose of this story is to explain how technology is applied to further the ranch's goals for herd improvement.

### Within-herd evaluation

It started with DNA-testing of bulls and heifers saved as seedstock herd replacements. This allowed for parentage verification, even when their dams had been exposed to several bulls in multiple-sire breeding pastures. Data was collected and submitted to the American Simmental Association, and ultimately to Cornell University, for calculation of in-herd expected progeny differences (EPDs) for birth weight, weaning weight, yearling weight and milk. Armed with the EPDs, Long developed his own index for selecting seedstock herd replacements and sire candidates for the Bell Ranch commercial division.

The seedstock herd typically tallies close to 400 females, but the ranch's main production herd numbers are close to 4,000. Each year, Long picks a set of bulls to be placed on a gain test. Based on their performance, the commercial division chooses about 40 yearlings from among the top performers. The process is not unlike the way many purebred operations select bulls they will offer for sale to their customers.

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► At branding, all calves sired by yearling bulls are individually identified and DNA-tested to match each calf with its sire.



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### Bell Ranch history

The first man to lay formal claim to the lands named for La Campana (Bell) mountain was Pablo Montoya, an aristocrat and former captain in the Spanish Army. In 1824, while serving as a government official in Santa Fe, Montoya acquired a Mexican land grant giving him domain over some 655,000 acres.

After New Mexico became a United States territory, attorney John S. Watts helped gain recognition of the Montoya grant by Congress. In return, he was given half interest in the holdings. By 1867, Watts had sought and secured title to all of the land.

The colorful Canadian-born Wilson Waddingham bought the ranch in about 1870. To stay ahead of his many creditors, Waddingham reorganized the ranch under several different holding companies, including Fort Bascom Cattle Co., Red River Land and Cattle and finally as Bell Ranch Co. He is also credited with registering the bell-shaped brand in 1875.

Waddingham's tough general manager, Michael Slattery, is said to have helped consolidate ranch holdings by forcing out area squatters. Slattery also fenced the ranch perimeter, introduced Durham bulls to the Longhorn cattle herd and experimented with irrigation.

After Waddingham's death, control of the ranch passed through the hands of several moneyed investors. The succession of hired managers included Charles O'Donel, noted for his dedication to developing the ranch as a grazing property and improvement of the quality of its cattle. O'Donel is said to be among the first to sell yearlings directly to Midwestern cattle feeders, instead of marketing 4- to 5-year-old steers.

In 1932, company president Julius Day hired Albert Mitchell as manager of the ranch, which was operating as Red River Valley Co. College-educated and just 30 years old, Mitchell also managed his family's Tequesquite Ranch, piloting an airplane between the two properties. Late nights in the office were followed by long days in the saddle, riding with ranch cowboys.

In the midst of drought and the Great Depression, the young manager searched out sources of forage, sending cattle to neighboring states and as far away as California and Pennsylvania. Mitchell held the outfit together and also made improvements to facilities that had fallen into disrepair. By 1947, the ranch was in shape to attract prospective buyers.

It sold, but was broken into six different parcels. Harriet Keeny purchased the headquarters and surrounding property, along with the brand. Mitchell's assistant, George Ellis, was hired to manage the "new" Bell Ranch. Working with New Mexico State University, Ellis introduced herd evaluation based on calf crop percentages, weaning (205-day) weight and temperament. Concerned with conservation and range improvement, he initiated water development and cactus control.

The ranch sold in 1970 to the William Lane family of Chicago-based Lane Industries. The family also purchased additional property that had been part of the original Montoya grant. Don Hofman succeeded Ellis as manager until 1986 when Rusty Tinnin took the reins. Upon Tinnin's death, earlier this year, Bert Ancell has served as interim general manager.

Along with its cattle operations, Bell Ranch enterprises include "The Hacienda." Constructed in the 1930s, the rock and adobe lodge served as a retreat for ranch owners and their guests, including an array of Hollywood celebrities. Today, "The Hacienda" is made available to the public, hosting family vacations and corporate meetings. Bell Ranch also hosts guided hunting of antelope and turkey, as well as trail rides among the canyons and mesas of New Mexico cow country.