



*O*cean winds off Cape Lookout howl relentlessly, driving a blinding rain. With 40-foot waves battering its hull, a Spanish galleon begins to founder. The gruesome crunch of breaking wooden planks signals that the ship has struck a shoal. As the ship lists hard to starboard, much of its cargo of people, horses and provisions spills out of the gaping hole in its side. In the raging sea, the passengers do not fare well. But the small, hardy Spanish mustangs swim a quarter mile to shore and find cover from the gale in a dense patch of maritime forest. The following morning, a brilliant sunrise finds a herd of two dozen horses alone on a piece of land that 400 years later will be called Shackleford Banks.

# Unbridled Alliance

To protect Shackleford Banks and its storied wild horses, citizens and the National Park Service have joined forces to balance island ecology and cultural expectations.

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**Shackleford's wild horses appear to enjoy a peaceful, idyllic life with plenty of space to roam. Aside from occasional bouts of severe weather, their primary foe is overpopulation.**

As dramatic and romantic as this vignette is, no one knows if anything like it ever really happened on the North Carolina coast in the 16<sup>th</sup> century. Certainly, given the huge number of shipwrecks off the Outer Banks over four centuries, it is possible that such an event occurred. But stories of shipwrecks are forever lost to the sea, and we can never be sure.

However, there are instances where origins—researched and debated though they may be—no longer matter. This is the case with the ponies of Shackleford Banks. Historians have documented that these wild horses have been on the island for at least 200 years, and scientists have shown conclusively that Banker ponies are genetically linked to Spanish mustangs. But in the last century, their legend took on mythical proportions and made them symbols that are inextricably linked to the culture of the Cape Lookout area.

“The history of the horses is fascinating,” said Carmine Prioli, an N.C. State University professor who has written extensively about that area of the coast, “but the history the horses have made is even more important.”

## *Handsome history*

Few creatures stir more passion in humans than wild horses. They represent freedom, power, beauty, toughness, grace and the very essence of wildness. They are the wind in our hair and the rumble of the prairie beneath galloping hooves. They charm us with gentle whinnies and big, liquid brown eyes that gaze into our souls and invite us to run with them. Wild horses are untamed creatures—the antithesis of Thoroughbreds. They became beautiful, powerful and fast not through careful breeding but by natural selection alone. Their idyllic lives inspire songs, poems, books and films.

Yet few creatures cause more problems for humans than wild horses. Where horses roam free, they are blamed for vehicle accidents and damage to landscaping, fences and other property. Wild herds can spread disease to domesticated horses. They multiply quickly and can easily outgrow their established forage area. Overgrazing and starvation in small, remote public lands are possible if wild horses are not managed for herd size and disease.



Nowhere has this dilemma been illustrated better than on Shackleford Banks, the only major North Carolina barrier island that is protected as a wilderness area and prohibits vehicles. Horses were living on Shackleford Banks long before the 9-mile-long spit of sand became an island. From the mid-1800s until the end of that century, a community known as Diamond City thrived on the east end of Shackleford, which was then physically connected to adjacent Core Banks. An estimated 500 people lived in Diamond City (so named for the pattern on the nearby lighthouse), and perhaps another 200 were scattered over the rest of Shackleford Banks. The residents worked the local waters, tended gardens and raised livestock, including horses.

The deadly San Ciriaco hurricane of 1899 wiped out Diamond City and chased its citizens to the mainland for good. Many of the displaced residents left their horses on Shackleford Banks to graze freely. A 1933 hurricane opened Barden Inlet, cleaving Shackleford from Core Banks and isolating a herd of ponies on the new island. With horses restricted to a smaller range, the locals still maintained ownership. They held yearly roundups called “pony pennings,” when they branded new foals, marking them as their own.

In 1966, Cape Lookout National Seashore was created, incorporating all of Core Banks. Twenty years later, in 1986, Shackleford Banks was added to the national seashore, and all signs of human existence — cottages, fishing shacks, livestock — were removed from the interior of the island. Unclaimed ponies gained their freedom, and Shackleford Banks became a sanctuary for wild horses.

With cattle, sheep and goats gone, the ponies had no competition for grazing land. Over the next decade, they multiplied quickly, and the herd expanded to about 200 individuals — too many for the island to support, according to biologists. Something had to be done.

### Coming together for horses

In the mid-1990s, dissent rose on the mainland and Harkers Island over the National Park Service’s plans for the Shackleford Banks horses. The Park Service proposed removing most of the horses on the island and maintaining a herd of 50 to 60. Equine geneticist Gus Cothran of the University of Kentucky warned the Park Service that their number was too small to sustain a genetically viable population. Local horse lovers became convinced that the ponies’ days would be numbered if the plan were implemented. A group of Carteret County citizens formed the nonprofit Foundation for Shackleford Horses and appealed to U.S. Rep. Walter Jones for help.

Meanwhile, disease testing found that some of the ponies were carriers of equine infectious anemia, a horse illness similar to AIDS in that it has an inapparent carrier stage. State law requires that any horse, wild or domestic, found to have equine infectious anemia be quarantined for life or destroyed. Seventy-six of the Shackleford horses tested positive — 41 percent of the herd. Because no quarantine site was available for that many horses, they were all euthanized.

Shocked into action, Jones drafted legislation in 1998 titled “The Shackleford Banks Protection Act,” which mandated that a herd of at least 100 free-roaming horses be co-managed on the island by the Park Service and the foundation. About that time, the Park Service hired equine biologist Sue Stuska to work with the herd and the foundation.

For the last five years, the unique arrangement appears to have functioned efficiently, with the co-managers working together well. The Shackleford population has been certified free of equine infectious anemia, with no danger that it will return. The ponies are safe on their island home, away from any other infected horses that could spread the disease.

Stuska handles surveys, censuses and constant assessments of herd health. She and the foundation act as liaisons to other scientists who have studied the Shackleford ponies for years. The group also facilitates the adoption of any horse that must be removed from the island. “We make sure they’re healthy and well taken care of,” said Carolyn Mason, president of the Foundation for Shackleford Horses. “We have vets brought down if need be, and we look for some really good homes for them. Our main interest is the long-term security

and safety of the horses.” Stuska agrees that the foundation has proven its worth. “We’re handling things that would be labor-intensive for them, and vice versa,” she said.

The foundation also raises money to use for scientific studies of the island and the herd by the Park Service and university researchers. Cothran and horse behaviorist Dan Rubenstein of Princeton have studied the Shackleford herd for years, and their opinions are sought when the time comes to make major decisions about the horses. Cothran, Rubenstein and other scientists consulted with the Park Service and the foundation to establish the optimum size of the herd — between 110 and 130 horses, which would allow for yearly population growth through breeding. From time to time, herd managers seek scientists’ advice on which horses to remove from the island for population control, or which mares should receive birth control.

Prioli, who wrote a forthcoming book on the Shackleford horses, agrees that cooperation is at a high. “It has taken a long time to find a happy balance between the ecology of the island and the viability of the horses,” he said. “It has also taken a lot of time to build the cooperation that now exists between the local population and the Park Service. That kind of cooperation is of historic importance.”

### Day-to-day management

Because the horses are isolated on a relatively small island of fewer than 3,000 acres, it is important to keep the herd size down and at the same time prevent breeding problems that occur when the horses are too closely related. Decisions about which horses are taken off Shackleford Banks are made very carefully to make sure that certain family lines are not overrepresented. For example, when one mare had four consecutive male foals with the same stallion, two of the foals were removed. The foundation, the Park Service and Rubenstein all keep genealogy records that are compared before decisions are made. “It’s not a bunch of local yokels going ‘eeny, meeny, miney, moe,’” Mason said. “We know those horses pretty well as to who is kin to whom because we’re over there a lot.”

Roundups now occur every three or four years as needed. Horses removed are generally subadult offspring of prolific mares and stallions, not adults who have gained status — so-called “alpha” mares and stallions. The dominant horses are left on the island to avoid major social changes that might affect behavior. When ponies come off the island,



The circle of life continues with about eight births on the island each year. Foals stay with their mothers until they are old enough to fend for themselves. Development just across Beaufort Inlet on Radio Island poses little threat to the ponies because they are protected by National Park Service policy. Carolyn Mason (left) of the Foundation for Shackleford Horses works closely with Park Service biologist Sue Stuska to manage the herd.





JODY DUGGINS

**From left: Orrin Pilkey, a Duke University geologist, has studied the Shackleford herd for 40 years. He believes that at its current size, the herd could overgraze stabilizing island grasses, with disastrous consequences for the horses. Small, fenced-in areas called exclosures keep horses out and allow researchers to study Shackleford flora that has not been impacted by grazing. Because they like to eat fresh, green growth, horses keep the salt marsh on the west end of the island manicured like a lawn. Sometimes a good back scratch in the hard sand feels nice.**



foundation volunteers prepare them for adoption. They socialize them, put halters on them and teach them to eat horse feed.

Stuska's duties include periodic assessments of the horses' body condition, which she determines by observing the musculature of their rumps and assigning a score to each horse. Her records tell if horses are getting enough to eat and how they are aging. Older animals may not metabolize feed well, even if plenty of food is available.

Stuska also notes the locations of harems, which are groups that consist of an alpha stallion, his few mares and their young offspring. She records each harem's location on a GPS unit and uses the data to draw the horses' home ranges on a map. Interestingly, she has found that harems rarely wander more than half the island away from their home range. Many horses on Shackleford have never crossed paths except during roundups.

Stuska helps visitors understand how to behave when watching the horses, which are dangerous wild animals that should not be approached, taunted or fed. A stallion is very protective of his harem and will kick or bite if he feels threatened. Feeding the horses could result in digestive problems or even death. If the horses were to associate people with food, they could become dangerously aggressive toward visitors. Stuska speaks from the Park Service point of view regarding wild animals interacting with humans. "What happens when a 900-pound stallion decides that he wants your lunch?" she said. "That's only going to hurt him in the long run. I don't want to have to remove him, but what are we going to do?"

Perhaps the toughest challenge these managers face is the balancing act of maintaining a wild herd. Although birth control and removal allow the horses to live relatively

naturally, environmental cycles like droughts and cold winters make life in the wild hard on the animals. Stuska is adamant that feeding the herd during harsh conditions, as horse lovers might be tempted to do, compromises the wildness of the horses and survival of the fittest by undermining the horses' adaptability and leading them down the path to domesticity.

"The park's goal is to maintain a wild herd," Stuska said. "The whole big deal about having those horses is that they're wild and free, and they do what they would normally do as wild animals. Anything we would do that would change that . . . something like providing water and food, I would hope that we would never, ever, ever have to go there."

#### *Disrupting natural processes*

Not everyone agrees that the co-management arrangement is working and that everything is going well on Shackleford Banks. Perhaps

the loudest critic of the current setup is Orrin Pilkey, a Duke University geologist who is one of the world's foremost authorities on barrier islands. He believes that having the foundation as co-manager of the herd irreparably undermines the authority of the Cape Lookout National Seashore staff. "My fundamental objection politically is that the Park Service has lost control of the herd," Pilkey said. "That should never be. I don't know of another situation where a particular part of an ecosystem has been taken away from the Park Service."

Pilkey, who has visited the island with his classes for 40 years, also dislikes the ecological changes he has seen on Shackleford. He is convinced that because the herd is too large, the horses are overgrazing the island from its shore to deep in its maritime forest. "They don't allow the island to evolve as it would naturally," Pilkey said.

Overgrazing, which Pilkey and others admit is hard to define, could disrupt the processes that link Shackleford's ecology and geology. The horses' preferred food is the *Spartina* salt marsh grass that grows on the sound side of Shackleford Banks. The *Spartina* traps sand, which then builds up in

the marsh. The marsh grass keeps growing up through the sand until it is too high above the water table for the grass to survive. Sea oats take over and trap more sand, creating dunes as the *Spartina* spreads toward the water and continues the process.

Natural building of the island is crucial in the long run. The gradual rise in sea level, attributed by many to global warming, eventually will inundate land that does not build above the ocean's surface. Pilkey finds it offensive that humans are allowing the horses to disrupt a natural process that eventually will save the island—and the horses—from sea level rise. He says the only way to restore the balance is to reduce the herd, but determining how small the herd should be is problematic. "I think it's going to be fewer of the horses than it is now," he said. "But I don't know what that number is, nor do I know how to measure it."

Stuska is uncertain whether reducing the herd would accomplish the goal Pilkey has in mind. Regardless of how many or how few horses are on the island, they will still return day after day to the *Spartina* marshes to feed. "Horses are very selective grazers," Stuska

said. "They will eat the new, tender growth of that plant to the exclusion of others." So even though the horses keep many areas of Shackleford salt marsh manicured like a lawn, they come to the water's edge to munch the fresh, green tips that keep regenerating.

Pilkey and the managers of the horse herd on Shackleford Banks agree on one major point. Much more research is needed before any widely accepted conclusions can be made about the horses' impact on the island. They say the first step should be a thorough botanical survey to identify plant species and determine the condition of the fragile maritime forest. No botanical research has been done on Shackleford in 20 years—since before the cattle, sheep and goats were removed. By all accounts, the island looks different now than when hundreds of other animals were grazing on everything in sight. Aerial studies would help identify vegetation types and show changes over the last couple of decades.

Next, Shackleford needs a geological assessment using the results of the botanical study to find out whether the horses are disrupting natural cycles as much as Pilkey suspects. Finally, biologists should determine the type of management required to keep a genetically viable herd. A decade of comprehensive, wide-ranging study could create a clear plan for the island's management for the next 50 years.

#### *Wild and free, vicariously*

Co-management, congressional legislation and years of scientific research seem like a lot of trouble to go through to keep a few horses on a small barrier island. Prioli, the NCSU professor, thinks the work is more than worth the effort. He said that using federal tax dollars to manage the horses on Shackleford Banks is a good expenditure, considering what the wild beasts do for our spirits. "Their role in the culture is deeply important," Prioli said. "They are an icon of American civilization. They connect us to the landscape and to who we are as a people. We desperately need that connection in a world where our lives are increasingly ruled by technology."

Even those who disagree intensely with keeping the herd at its current size can appreciate the inhabitants of such a unique place. "The herd on Shackleford is a very rare herd of truly wild horses on a wild island—a precious thing," Pilkey said. "There are so few places where that could possibly come to be." ♦