

Cape Lookout National Seashore Shackleford Banks Horses 2017 Annual Report

**National Park Service
Cape Lookout National Seashore
131 Charles Street
Harkers Island, NC 28531**

Site Location and Description

Cape Lookout National Seashore (the park) is located in the southern Outer Banks of North Carolina between Beaufort and Ocracoke Inlets. Here, the National Park Service (NPS) manages fifty-six miles of barrier islands. Shackleford Banks is the southernmost island in the park between Barden's Inlet to the east and Beaufort Inlet to the west. It lies south of the Town of Beaufort and Harkers Island. Shackleford Banks is approximately 8.3 miles long and ranges from less than one half mile wide to more than 1.5 miles wide where the eastern marsh islands are included.

Management Directives

Federal legislation passed in 1998 as 16 U.S.C. §459g-4 (<https://www.gpo.gov>) and the subsequent 2005 Amendment by Congress 109-117;119-§2526 (<http://uscode.house.gov>) to the legislation protects the wild horses within Cape Lookout National Seashore. The horses are cooperatively managed by the park and the Foundation for Shackleford Horses, Inc., (Foundation). This annual report on the status of the herd covers the 2017 calendar year.

Horse Population

The population is managed with a legislated target range of 120 to 130 horses (<http://uscode.house.gov>). As of January 2, 2018, the official population on Shackleford Banks was 120. The number of horses in the herd has generally increased from 2013 to 2017. No roundups are planned in the foreseeable future.

Gender and Age Structure

As of January 2, 2018, there are a significantly larger number of females in the oldest age classes. Of the 20 horses that are 20 years of age and older, 17 are female. The three males are 20.5, 21.5 and 22.5 years old, respectively. The oldest horse during 2017 was 34 years old. Contraception has been linked to increased longevity among treated females (Kirkpatrick, 2009). The average age of the horses living on Shackleford Banks as of January 2, 2018 is approximately 10 years.

Mortality

Mortalities are recorded either when a body is found or when the horse is not sighted for many months. If one of the 120 horses included in the January 2, 2018, count is later determined to have died prior to this date, future raw data will reflect this.

In 2017, herd mortality was 5% with six deaths. This is lower than the average mortality from 1999 to 2016, which was 6%. In 2017, one adult female horse died at age 25; four adult males died at ages 20, 18, 15, and 14; and one female foal died at less than a month old. The 14-year-old died of

complications from wounds of the lower leg apparently caused by a man-made object on the island. Since 1999, data shows that Shackleford Banks horses live approximately 11 years.

Births and Foal Mortality

Fourteen foals were born in 2017. One died before it reached one month of age. The 7% foal mortality in 2017 is below the annual average of 22% calculated since 2000. Since 2009 when the last birth control was administered for population reasons, the birth rate has been gradually rising.

Genetics Data

Dung was collected from the foals of 2017 by standard collection protocol (Waits, 2009) to determine their genotypes. Analyses will be done according to protocol by the Laboratory for Ecological, Evolutionary and Conservation Genetics at the University of Idaho (Adams, 2016). The maternal and paternal genotypes are known from previous analyses, and, using them, foal paternity will be determined. The resulting lineage data will be used for decision making for management actions by the park and Foundation.

Contraception

Contraception has been used adaptively to manage the wild horse population beginning in 2000 (National Park Service, 1996, 1999, 2005, 2010). No mares have been contracepted for population control reasons since 2009.

Public Education and Partnerships

The Wild Horse Public Education Campaign (WHPEC) was begun in 2011. WHPEC involves Cape Lookout National Seashore, the Foundation for Shackleford Horses, and the nearby Rachel Carson Reserve National Estuarine Research Reserve. The aim of the campaign is to educate people about the horses with an emphasis on safety of the horses, park and Reserve visitors, and pets. The general message is to watch the horses without interacting with them or interrupting their natural behavior. Facebook and Twitter postings during 2017 were designed to keep the horse protection message fresh in the minds of social media followers.

A leashed dog campaign was carried out in the summer of 2017. Partners, besides the park Foundation and Reserve, were the Beaufort Police Department, Island Express Ferry Service and AKC Reunite. A professional photo session on the Reserve resulted in photos for various social media posts, a post card and two sizes of posters. Also included were the Health Department (Animal Control) and local shelter PAWS. The Foundation set up a booth on the Beaufort waterfront in August.

NPS Youth Partnership Project funds were used to partner with North Carolina State University and the University of Tampa to create K-12 curriculum highlighting the message of safety around wild horses. Four local teachers participated in a week-long Institute. Three units were created: Horses and Humans for 3rd-6th grade Science, ELA and Math; Past, Present and Future for 6th -8th grade Science and Social Studies; and Genetics and Evolution for 8th grade Science. They are available at <https://calohorse.wordpress.ncsu.edu/curriculum-and-lesson-plans/>.

Research

In the spring of 2017, Drs. Dan Rubenstein of Princeton and Karen McComb of the University of Sussex led a team of researchers expanding their domestic horse studies of emotional awareness to the wild horses. They believe that horses who discriminate better between welcoming and challenging horse vocalizations and ear positions will be more successful socially (McComb, 2017).

During 2016, Maggie Jones and Dr. Cassandra Nunez of Iowa State University conducted a study in which preliminary data analysis suggests that differences in mare behavior, specifically harem changing behavior, and differences in the ecology of home ranges, affect the frequency of the stallion's fighting behaviors (Jones, 2016). Previous studies indicate that contracepted mares change groups more frequently than mares not treated with porcine zona pellucida.

The Youth Partnership Project funds also contributed to research on visitor-horse interactions. University of Tampa students London Carpenter and Dominique Notare collected data which will be analyzed with their professor Dr. Jessa Madosky to give feedback to the educational campaign.

Foundation for Shackleford Horses, Inc., Work

During the year, the Foundation for Shackleford Horses, Inc., contributed well over 2710 volunteer hours performing diverse work related to the Shackleford Banks horses both on and off the island (FSH, 2017). Its Board of Directors is comprised of nine volunteers; additional volunteers contribute significantly.

Citations

1. US Government Publishing Office Federal Digital System document, accessed February 22, 2016, <https://www.gpo.gov/fdsys/granule/USCODE-2011-title16/USCODE-2011-title16-chap1-subchapLXIII-sec459g-4>.
2. US Government Publishing Office Federal Digital System document, accessed February 22, 2016, <http://uscode.house.gov/statutes/pl/109/117.pdf>.
3. Jay Kirkpatrick, et al., "The practical side of immunocontraception: Zona proteins and wildlife." *Journal of Reproductive Immunology* 83 (2009): 151-157.
4. Lisette Waits, "Scat Collection Protocol," January 10, 2009.
5. Adams, Jennifer and Lisette Waits, "Paternity Analysis of Nine Foals Using Fecal Samples", Preliminary Report, January 11, 2016.
6. National Park Service, Cape Lookout National Seashore, Management Plan for the Feral Horse Herd on Shackleford Banks, 1996.
7. National Park Service, Cape Lookout National Seashore, Management Plan for the Feral Horse Herd on Shackleford Banks, 1999.
8. National Park Service, Cape Lookout National Seashore, Management Plan for the Shackleford Banks Horse Herd, 2005.
9. National Park Service, Cape Lookout National Seashore, Management Plan for the Shackleford Banks Horse Herd, 2010.
10. McComb, Karen, Dan Rubenstein, et al., "Emotional Awareness as a Basis for Social Success in the Horse: A Short Study on Shackleford Banks Feral Horses," 2017.
11. Jones, Maggie and Cassandra Nunez. "Preliminary Analysis from Fieldwork Conducted on the Shackleford Banks Horses, June-August", 2016.
12. Foundation for Shackleford Horses. "Foundation for Shackleford Horses Volunteer Hours 2016-2017."