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United States Department of the Interior

Assateague Island National Seashore

Feral Horse Management at Assateague Island National Seashore

Assateague Island National Seashore was established in 1965 as a unit of the National Park System. The mission of the National Seashore is to preserve and protect the unique coastal resources of Assateague Island and provide high quality resource-based recreational and educational opportunities. The feral horses of Assateague Island are one of the Park's most well known resources. Thousands of visitors are attracted to the Seashore each year for the opportunity to view free-roaming horses in a natural setting. Since the Park Service acquired ownership of the horses in 1968, the size of the population has grown dramatically. With this growth has come an increase in the negative effects of feral horses on other natural resources. Although the horses are an important part of the Assateague experience, there is a pressing need to manage the population in ways that will provide for the long-term health of the herd as well as minimize adverse impacts to other resources.

The NPS is faced with competing objectives and interests in managing the feral horses. The goal of this planning process is to find an appropriate and sustainable balance between:

Protecting the health and viability of the herd while providing visitors with reasonable opportunities to view free-roaming horses.

Protecting the natural barrier island ecosystem and the many rare species and sensitive plant communities that occur there.

Horse Management Goals

- ✓ Reduce the negative impacts of horses on key species, communities and natural processes to levels compatible with legal mandates and the continued evolution of Assateague Island toward a natural condition.
- ✓ Maintain a free-roaming herd of feral horses that exhibit natural characteristics and are subject to natural processes.
- ✓ Maintain a healthy population of horses capable of successful reproduction.
- ✓ Educate the public about the Assateague horses, including their history, behavior, ecological impacts and scientifically-based management.
- ✓ Recognize and utilize the population as a valuable research resource; however, management strategies will not be modified in the interests of research.
- ✓ Provide a reasonable opportunity for visitors to view horses safely.

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History of Horses on Assateague Island

Horses were first recorded as being present on Assateague Island in the **1600**s

Early residents used the Island to graze all types of livestock, including horses

1920 - First pony-penning held by Chincoteague Volunteer Fire Department in Virginia

Proceeds used to support the Fire Department

1943 - Chincoteague National Wildlife Refuge is established

Horse herd remains in the ownership of Chincoteague Volunteer Fire Department

Early 1960's – Private landowners purchased some of the horses living on the Maryland portion of Assateague Island

1965 - Assateague Island National Seashore is established

Fence at the MD / VA state line erected and all Fire Department-owned horses removed from MD

1968 - National Park Service acquired ownership of MD horses and their offspring

The herd has grown to 28

1970's – 1980's - National Park Service observed increasing evidence of resource damage caused by the expanding population of feral horses

1982 - National Park Service published General Management Plan

The plan recognizes the feral horses as non-native, but also directs that the horses to be managed as a "desirable feral species"

1986 - National Park Service recognized the need for horse population control and initiated research to develop contraceptives

1994 - National Park Service begins contraception program. The horse population is 166

March 2006 - Feral horse population is 143.

There are 55 males and 88 females

Spring 2006 - Population and Habitat Viability Workshop conducted by Conservation Breeding Specialist Group with key stakeholders and partners

The workshop evaluated goals for the feral horse herd and developed potential management strategies

Fall 2006 - National Park Service initiates planning process to identify and assess new alternatives for management of the Assateague feral horses

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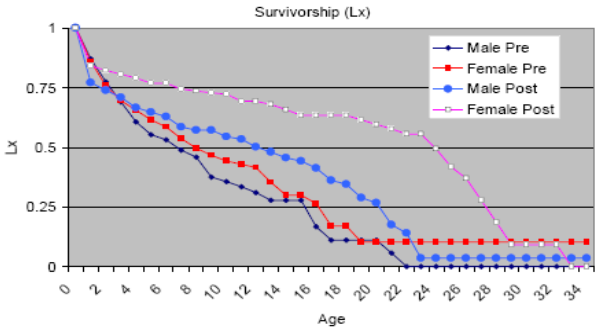
Population Management Through Contraception

The National Park Service has been controlling horse population growth since 1994 using contraceptives. Porcine Zona Pellucida (PZP) is a non-hormonal contraceptive vaccine that works with a mare's immune system to prevent fertilization. At present, every mare begins contraceptive treatments at two years of age and is then treated for three consecutive years. At that point the mare is allowed to foal once, after which she is returned to annual contraceptive treatments for life.

PZP Contraception

- 93%-100% effective each year
- Fully reversible up to five consecutive years of treatment
- Delivered remotely using a dart rifle with no capture or handling of horses necessary
- Safe for pregnant mares and their unborn foals
- No negative side effects on horse health
- Will not pass through the food chain
- No effects on behavior or social structure



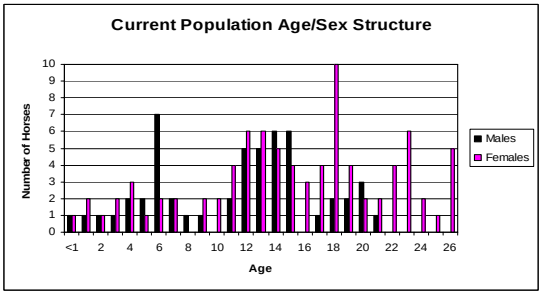
Contraception has improved the health and life expectancy of mares

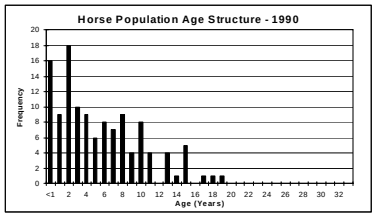
- Approximately 70% of the mares are being treated annually
- Maximum age for mares to date is 32, stallions 24

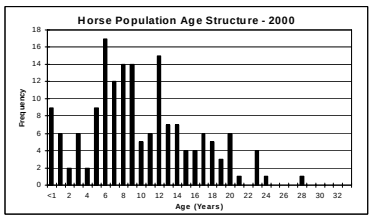
March 2006 feral horse population = 143
88 females and 55 males

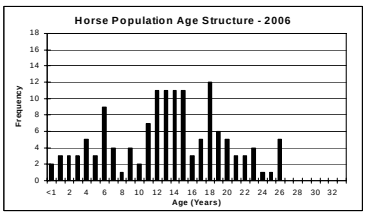
How has contraception changed the horse population?

- Population size has slowly decreased.
- Age structure has changed from mostly young horses to primarily middle-aged.
- Mares are living longer, healthier lives.
- The sex ratio at birth is still 50-50, but the overall ratio is now 40-60 males to females.
- The population would benefit from having a higher proportion of younger horses









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Environmental Effects of Feral Horses on Assateague Island

Management Goal: Reduce the negative impacts of horses on key species, communities and natural processes to levels compatible with legal mandates and the continued evolution of Assateague Island toward a natural condition.

Priority Issues

- ✓ Impacts to salt marsh
- ✓ Impacts to dune formation/stability
- ✓ Fewer rare and threatened species
- ✓ Changes in plant composition
- ✓ Reduced biodiversity
- ✓ Soil compaction
- ✓ Loss of natural habitats
- ✓ Interruption of wildlife ecology

Examples of Horse Related Impacts

Reduced Diversity and Altered Community Species Composition

- Horse grazing is contributing to a reduction in plant diversity in island forest and beach communities.
- Horse grazing is causing changes in the species composition of low salt marsh communities. The result has been an increase in the number of areas occupied by plant species that are less tolerant of prolonged periods of flooding.

Reduced Productivity and Reproductive Capacity

- Horse grazing is reducing the primary productivity as well as the number and size of flowering seed heads in island dune and low salt marsh communities.
- Horse grazing is currently a primary factor causing a reduction in the survival, productivity and reproductive success of seabeach amaranth, a plant species that is federally listed as threatened with extinction.

Horse-related impacts to island resources were first observed when the population was between 80 - 100 horses.

Inside Grazing Exclosure Outside Grazing Exclosure

Reduced Cover and Loss of Functional Value

Horse grazing is reducing the amount of vegetation growing in island dune and low salt marsh habitats. This in turn disrupts essential island ecological functions such as dune formation or water filtration / marsh sedimentation processes.

Disrupted Succession

Horse grazing is significantly increasing the rate at which bulrushes colonize new areas. This has resulted in accelerated habitat alterations which in turn are reducing the reproductive success of piping plovers, a bird species that is currently threatened with extinction.

Reduction of Rare Species

Horse grazing is decreasing the abundance of secretive marsh birds such as Black, Virginia and Clapper rails. Black rails are considered to be in need of conservation action in Maryland.

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Population Health of Feral Horses on Assateague Island

Management Goal: Maintain a free-roaming herd of feral horses that exhibit natural characteristics and are subject to natural processes.

"Free Roaming"

- Horses have the ability to travel more or less freely on the island
- Permanent barriers to horses should be discouraged
- Fewer horses may reduce the need to limit horse access to sensitive areas

"Natural Characteristics"

- Access to critical biological and social resources is ensured
- Population management strategies ensure that horse behavior remains normal

Management Goal: Maintain a healthy population of horses capable of successful reproduction.

"Healthy Population"

Behavior - Demonstrates social organization and behaviors of wild horses

Nutrition - Exhibits average body condition indicative of adequate nutrition

Genetic - Maintains sufficient genetic diversity to avoid problems with inbreeding

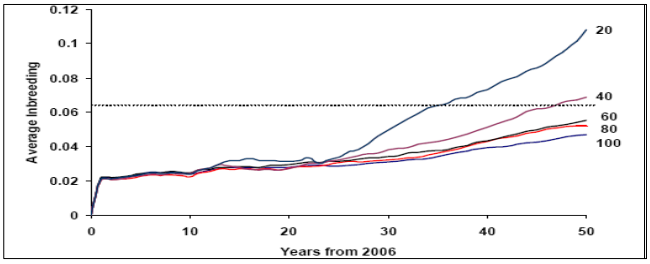
Life History - Demonstrates characteristics consistent with other healthy wild horse populations (e.g., longevity, sex ratio, age structure)

"Capable of Reproduction"

- Protect animals in peak reproductive status (e.g., 6-12 years of age)
- Maintain genetic diversity to avoid inbreeding effects
- Maintain natural age/sex distribution (predictable numbers of foals & mortality)

Genetic Status of the Assateague Horses

- Genetic samples from 176 horses analyzed in 2005
- Mitochondrial DNA used to assess maternal pedigree for every individual
- Computer modeling used to infer paternal pedigree
- Nuclear genotypes used to assess genetic diversity of herd
- Genetically-verified pedigree used to examine age and sex structure of herd



Accumulation of inbreeding over time for different target population sizes

The Results

- ✓ *Current population maintains a relatively high level of genetic diversity*
- ✓ *Original 'founders' of the herd continue to be well represented in the population*
- ✓ *Moderate rate of loss of genetic diversity*

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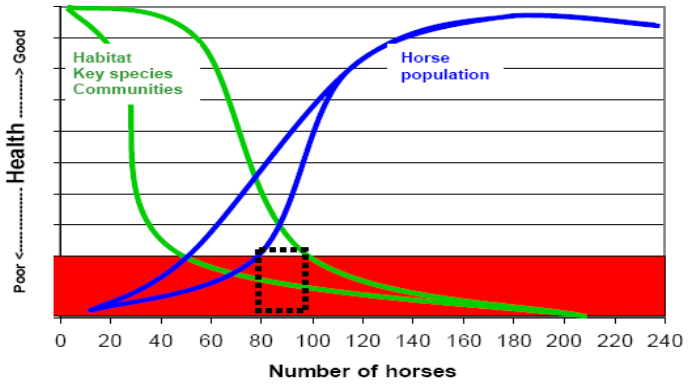
Finding an Appropriate and Sustainable Balance

To protect the natural resources of the island, how many horses are acceptable, and to maintain a healthy herd, how many horses are necessary?



Theoretical relationship between number of horses on MD portion of Assateague Island and the relative health of the horse population (in blue) and ecosystem (in green)

In 2006, a Feral Horse Population and Habitat Viability Assessment (PHVA) was conducted to consider issues surrounding the feral horse population on Assateague. The PHVA engaged resource experts, stakeholders, and advocacy groups in a series of workshops during which participants reviewed pertinent information, defined key issues, and identified potential management strategies. The results of the PHVA suggest that a **population range of 80-100 horses** could significantly reduce the impacts caused by horses yet protect the health and viability of the herd.

Strategies to Reduce Horse Population Size

Contraception Alone	Contraception & Removals	Removals Alone
Continue existing program of intensive contraception (deaths > births) and slowly reduce the population to the target level When target is reached, maintain population within range (births = deaths) using contraceptives	Continue existing program of intensive contraception along with selected removal of horses When target is reached, maintain population within range (births = deaths) using contraceptives	One time removal of horses to quickly reduce the population to the target level When target is reached, maintain population within range (births = deaths) using contraceptives

Slower (up to 8 years) ⟷ ***Timeline*** ⟷ **Faster** (as little as 2 years)

Potential Options for Removing Horses:

- ✓ **Public Auction** (as is currently done with the Chincoteague Ponies)
- ✓ **Adoption Program** (similar to the Bureau of Land Management's program for wild mustangs)
- ✓ **Removal to Off-island Sanctuary** (one or more private "horse sanctuaries")

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Horse Management Planning

Steps in the Planning Process

We are here

Step 1. Define purpose and need for action
Step 2. Conduct scoping and define alternatives
Step 3. Identify environmental impacts and select preferred alternative
Step 4. Prepare Environmental Assessment - assessment of effect
Step 5. Public review of Environmental Assessment
Step 6. Analysis of public & agency comments
Step 7. Prepare decision document
Step 8. Release decision document to the public

This is your time to provide input and air your concerns about issues you think should be addressed by the Environmental Assessment.

The official public scoping process ends on December 15th, 2006.

Please send your written comments to:

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Assateague Island National Seashore
7206 National seashore Lane
Berlin, MD 21811

or by email:
carl_zimmerman@nps.gov

Questions? Contact us by telephone at (410) 641-1443, x 213

Please continue to follow and participate in this process with us by logging on to the National Park Service's Planning, Environment and Public Comment website at

http://parkplanning.nps.gov

Once at the site, select Assateague Island NS from the "choose a park" list and then click on the project "Development of Alternatives for Managing the Feral Horses of Assateague Island National Seashore".