Virginia Range Fertility Control Program

YEAR 3 REPORT

SUBMITTED BY THE AMERICAN WILD HORSE CAMPAIGN

Introduction

The Virginia Range Horse Fertility Control Program, implemented through a limited purpose, non-exclusive Cooperative Agreement between the American Wild Horse Campaign (AWHC) and the Nevada Department of Agriculture (NDA) continues to deliver strong results. Despite beginning in April 2019 during peak foaling and breeding season, the program has resulted in a steady decline in the number of foals born each year. Recorded births totaled 554 in 2020, down to 327 in 2021, and further declining to 201 for January through June 2022, which includes the March/May peak foaling season. Based on 2020 and 2021 foal mortality data, fewer than 100 of these 2022 foals are expected to survive beyond the first year. A sharp decline in births is predicted to continue from July-December 2022. (See chart below.) As we continue to expand and increase darting access in more remote areas, population growth rates are expected to continue to decline.

On April 28, 2022, AWHC and NDA signed the Year 4 Cooperative Agreement covering a period of May 1, 2022 – April 30, 2023. The program continues to enjoy broad community support, including Nevada Governor Steve Sisolak, Nevada Assemblyman Jim Wheeler, the Tahoe Reno Industrial Center (TRIC), the tech company Blockchains, LLC, local governments such as the Storey County Commissioners, multiple community organizations, and local wild horse advocacy groups. Participating landowners include TRIC, Blockchains, Switch, Tesla, The Nature Conservancy, Nevada State Parks, the Bureau of Land Management (BLM), Waste Management, Reno Land, EP Minerals, and many more.

The Virginia Range program is the largest free-roaming horse fertility control program in the world, according to the Science and Conservation Center (SCC), which manufactures the porcine zona pellucida (PZP) vaccine utilized in the program and provides certification training for its application. This applies to both the treatment area (just under 300,000 acres) and the population size (approximately 3,186 confirmed living horses to date). This program continues to gain international recognition and attention from political leaders and management entities striving to improve the management of wild equids on the range. In May 2022, AWHC was a platinum sponsor of the Botstiber International Wildlife Fertility Control Conference held in Colorado Springs, where we were able to highlight the Virginia Range program and discuss details with many experts and researchers in the field. Five staff members, including our Program Coordinator and Special Projects Manager, attended the conference.

Program Costs

AWHC's fiscal year runs from January 1 – December 31. In addition to the fertility control program, AWHC funded the diversionary feeding for a public safety program at TRIC, conducted under the range management Cooperative Agreement between NDA and Wild Horse Connection. AWHC's expenditures on the Virginia Range program are as follows:

Item	2021	2022 (through Q2)
Fertility Control	**$236,267**	**$113,478**
Public Safety Diversionary Feeding (TRIC)	**$71,659**	**$38,064**

Funding sources: Blockchains LLC/Project Frontier, Bently Foundation, Giant Steps Foundation, Engelstad Foundation, Summerlee Foundation, The Marilyn Lichtman Foundation, Individual Contributions.

PZP Vaccine (Background)

The program utilizes the Porcine Zona Pellucida (PZP) immunocontraceptive vaccine administered via remote darting to breeding-age female horses using CO2-powered rifles.

PZP is scientifically-proven to be safe and effective, with over three decades of use and is recommended by the National Academy of Sciences (NAS) for use in federally protected wild horse herds. The vaccine produces an immune response that prevents fertilization without impacting the reproductive hormones that drive natural behaviors. It is reversible and safe for delivery to pregnant and nursing mares.

The PZP vaccine requires a primer and booster dose in the first year and annual boosters thereafter. Many mares are now getting their yearly boosters, accounting for our total treatment numbers. PZP is more than 90 percent effective in preventing pregnancy when mares are fully vaccinated within specified time periods.

Fertility Control Year 3 Progress

Treatments

During the third year of the Fertility Control Program (May 1, 2021 – April 30, 2022), the AWHC team treated 1,376 mares with PZP for a total treatment count of 2,048 PZP vaccines via dart delivery, including 459 primers and 1,589 boosters.

The initial program goal (and benchmark for effective fertility control) of vaccinating 80% of the estimated breeding age mare population has been achieved each year and we expect to continue meeting, if not exceeding, this goal.

With our continued progress in increasing access agreements with private property owners and limited use bait-feeding approvals from the NDA, we expect an even greater impact resulting from the fertility control program in 2023 and beyond.

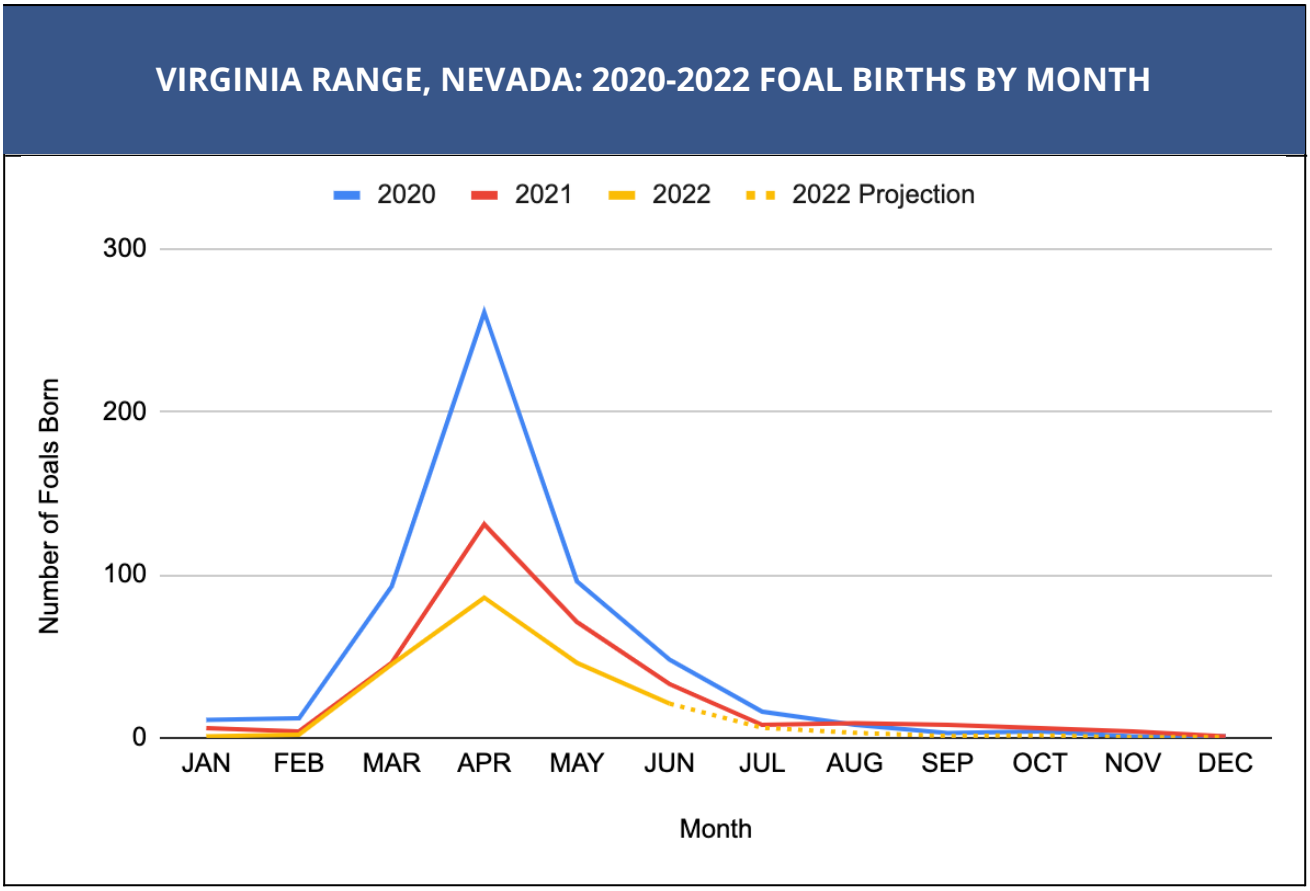
AREA	MARES	PZP*
Biddleman SP	15	18
Dayton Valley	71	109
Fernley	119	158
Highlands	89	118
HV Hillside	66	114
Lockwood	132	184
Meadows	71	109
Mound House	151	223
Rhodes Road	91	139
Silver Springs	49	68
Stagecoach	64	94
The D	33	52
USA Parkway	316	499
Washoe	109	163
TOTAL	**1,376**	**2,048**

Fertility Control Year 3 Progress (continued)

Foal Counts

For the purpose of this report, we are relaying foal births this year to date (January 1 – June 30, 2022), which includes data through the peak foaling season. Foals born during this period total 201, with 4 removed and 52 deceased or missing and assumed dead. In 2020, during the same time period (January–June), 521 foals were recorded as being born.

This shows a 61.4% reduction in the number of foals born in 2022 as compared to the same time period in 2020. Foal mortality remains high due to natural predation and other causes, averaging 52.5% for the last full year (2021). Based on data collected to date, a similar foal mortality rate is expected for 2022.



Standard Operating Procedures

Standard Operating Procedures (SOPs) are continuously updated from previous years and cover the darting process, access requirements, and safety. The current Darting SOP can be found **here.** The Database SOP for data entry and maintenance has also been continuously updated throughout the years with the goal of improved entry standardization and quality control to meet the needs of a growing program. Since June 2019 AWHC has been updating historical records to comply with updated SOP standards to improve consistency and clarity. Out-of-date data continues to be removed and updated, and horses that have not been seen for over 3 years have been archived and marked deceased. The current Database SOP can be found **here.**

Fertility Control Year 3 Progress (continued)

Database

The database is used to record information such as horse name, number, gender, band affiliation, age (if known), physical color and unique markings, general range/territory as reported by volunteers, PZP vaccination history, and other pertinent information about individuals or bands.

All aspects of AWHC's fertility control program are tracked in the wild horse database, including information relating to PZP vaccination (e.g., date of darting, darter, darting location, distance from the horse when darted, CO2 pressure level, primer vs. booster vaccine, PZP lot number, and dart performance and recovery status) and foaling rates. This allows us to track data trends such as dart recovery rates. For Year 3 of the cooperative, we had a 99.51% recovery rate, with 2,048 treatments and 2,038 darts recovered.

The current database has been updated to include 3,186 individually identified and confirmed living on the range. In addition, 417 horses are marked as missing, 145 removed, and 1,683 confirmed deceased. These numbers are updated regularly as documenters move into more remote areas of the Virginia Range

AWHC's Tracy Wilson and Dr. Shulman

Virginia Range darter, Diana Fowler

Data Analysis

AWHC is partnering with the University of Pretoria for program data analysis with a focus on the efficacy and safety of the PZP vaccine and its impact on Virginia Range horse foaling rates. This is groundbreaking work since previous studies have focused on smaller populations and habitat areas. Analysis of 2020 and 2021 data should be completed later this year.

Sponsored by AWHC, Dr. Martin Schulman, Veterinary Professor, and Specialist/Researcher in Equine Reproduction at the University of Pretoria, traveled to attend the Botstiber International Wildlife Fertility Control Conference in Colorado Springs in May 2022. Dr. Schulman then visited the Virginia Range where AWHC staff accompanied him on a driving tour of the full range.

Dr. Schulman and an AWHC staff member also participated in a flyover with a private pilot. Both tours focused on range and horse conditions, as well as the challenges and successes of the program. Observations included that the horses were in better than expected body condition considering current drought conditions.

These tours enhanced Dr. Schulman's overall impressions and understanding of the landscape, boundaries, development, and gave him a firsthand view of the horses themselves.

Year 3 Goal Progress

Darting Access

We achieved our goal of expanding access to private property for fertility control darting, increasing the total number of approved properties to 84. In addition, large commercial land owners such as Waste Management continue to renew their access agreements annually. Continued community and business support for the program contributes to its success by influencing private property owners to partner with AWHC for darting access.

Training

We achieved our goal of expanding the number of trained volunteers for the program. During the reporting period:

- Seven new darters were trained through the Science and Conservation Center (SCC) certification class. This brings the total number of available certified darters to 21.
- Three additional documenters were trained, bringing the documenter total to 23.
- Ongoing training for veteran documenters and spotters continued via both Zoom and in the field.

Individual in-person meetings between the project coordinator and volunteers have resumed post-COVID-19 restrictions. Feedback from herd leads (volunteers who are responsible for ensuring data integrity for specific areas of the Virginia Range) is discussed as an ongoing process to ensure that best practices are being followed and updates in protocol are implemented where necessary.

The retirement of staff members and volunteers has resulted in a fluctuation of our team member numbers.

Challenges for the Program

1. Delays in new volunteer recruitment and training due to the SCC's limitations on off-site training opportunities while they ramp up vaccine production at the lab. This has limited the number of new darters who can be trained to date this year.
2. Slow property access approvals for darting and documenting resulting from legal requirements by companies with high-security access restrictions for property at TRIC.
3. The prohibition on darting the horses south of Highway 50 and north of the Carson River under the Cooperative Agreement has limited full access to the Virginia Range horse population. These horses are listed in the total population and foal birth counts provided by AWHC to NDA, but since they fall outside the southern boundary of the Virginia Range as defined by the Cooperative Agreement, AWHC cannot dart them. Meanwhile, the BLM continues to maintain that the horses in this area are not BLM horses, creating a bureaucratic inconsistency that has created a treatment gap. AWHC is unable to treat or retreat mares who travel into this area via a wildlife underpass or unfenced roadway. These mares will continue to reproduce until access to the horses in this area is granted by NDA.

Photo: Christine Dallas


Photo: Deb Sutherland

Goals for Year 4

- Continue to meet the goal of treating at least 80 percent of the population of reproductive age females.
- Train 3 new darters in Summer 2022 in Billings, MT at the SCC certification class. This will bring the total number of available certified darters to 24.
- Identify and treat mares in remote areas with NDA approved bait-feeding and increased property access permissions.
- Work with BLM and NDA to gain access to treat and retreat transient Virginia Range mares between Highway 50 and the Carson River who are currently moving in and out of the NDA fertility control agreement area, crossing the southern boundary through wildlife passages and unfenced roadways.
- Continue to increase public education opportunities for program understanding through new business and public safety training, speaking engagements, fairs and exhibits, and darting tours.
- Use data analysis by the University of Pretoria to document program impacts and evaluate and adjust treatment protocols to ensure maximum efficacy.
- Assist with research updates to training modules used by the SCC in darter certification classes utilizing data analysis findings from University of Pretoria.

Questions and More Information

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