Agenda

- Background: Wild Burro Fertility Control Research
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- Preliminary Results
- Acknowledgments

Photo credit: Grace Kahler/HSUS
Background: Wild Burro Fertility Control Research

- Turner et al. (1996) - PZP **safe, effective, and reversible** in burros on U.S. Virgin Island of St. John

- Wild burro fertility control research has not been a priority:
  - Fewer HMAs/smaller populations
  - Slightly lower population growth rates
  - Higher adoption demand results in fewer in holding facilities

Photo credit: Grace Kahler/HSUS
Purpose
Build scientific foundation for incorporating fertility control into BLM’s wild burro management programs

Goal
Examine the feasibility and applicability ZonaStat-H to wild burros in a western landscape.

Photo credit: Grace Kahler/HSUS
Objectives

- Can unhabituated burros be retreated remotely?
- What are the effects of ZonaStat-H on individual jenny foaling rates?
- What are the effects of ZonaStat-H treatments on the health and social dynamics of treated burros?
Study Site and Herd

Location

- Black Mountain Herd Management Area, Northwestern Arizona; USA
- Largest HMA in Arizona, 1.1 million acres
- Project area concentrated in the southern half of the HMA
- Historic gold mining town of Oatman lies in the center of the project area, along Historic Route 66.

Habitat

- Mojave Desert; Rain-shadow high desert
- Elevation Range: 1800-5200ft
- Typically hot, dry, and windy.
- Large mesas, steep cliffs, rocky foothills, and sandy washes.

Herd

- Largest wild burro population managed by the BLM.
  - Aerial survey in 2021 estimated over 2900 burros
- Oatman Burros; habituated wild burros hand fed by tourists.

Figure credit: DOI-BLM-AZ-C010-2016-0004/BLM EA
Phase I: Capture and Process

- Bait-trapping
- Freeze-marking
- Treatment
- Release
Study Groups

All wild jennies inducted into the study were trapped and transported to the BLM corrals for processing

<table>
<thead>
<tr>
<th>Control Group A</th>
<th>Treatment Group B</th>
<th>Treatment Group C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A animals do NOT receive ZonaStat-H.</td>
<td>• Freeze-marked (051-085)</td>
<td>• Freeze-marked (101-135)</td>
</tr>
<tr>
<td>• Freeze-marked with 3-digit identification number on both hips (001-032)</td>
<td>• Photographed, hair samples taken for genetic analysis</td>
<td>• Photographed, hair samples taken for genetic analysis</td>
</tr>
<tr>
<td>• Photographed, hair samples taken</td>
<td>• Primer ZonaStat-H via hand injection given in hip/gluteal muscle</td>
<td>• Primer ZonaStat-H given via hand injection in hip/gluteal muscle and released.</td>
</tr>
<tr>
<td>• Released immediately after processing.</td>
<td>• Released into holding corral for minimum two weeks</td>
<td>• Follow-up from two weeks to six months, locate the jennies within the HMA and darted with booster ZonaStat-H.</td>
</tr>
</tbody>
</table>
Phase II: Remote Treatments and Observations

- Administer initial boosters to Group C jennies
- Administer annual boosters to all Group B and Group C jennies
- Ground observations
  - Foaling rates
  - Body Score Condition (BCS)
  - Injection site reactions
Preliminary Results: Field efficiency in remote-delivery of ZonaStat-H

Jennies were able to be retreated remotely with little variation in effort (time) or distance (darting).

- Of the 70 unhabituated jennies, 51.4% received all four boosters of ZonaStat-H.
- Successful methods of delivery were:
  - **Bait**: utilized during normal burro movements.
  - **Truck**: road/trail side opportunities.
  - **Foot**: approached within a safe distance on foot.
- Overall darting effort (hours) of wild jennies remained relatively constant.
- No significant differences of delivery distance by booster, delivery method, or treatment group (mean = 27.4 meters).

The data presented is preliminary and meant to provide a preview for future publication.
**Preliminary Results: Vaccine Impacts on Foaling Rates**

Significant decrease in foaling and additional boosters sustained contraception.

- **Control** Jens averaged 73.7% foaling rate.
- All treatment groups had **significant decrease** in foaling rate after 24 months. (B=0% and C=4.9%)
- Variation in booster delivery did not have an effect on contraception.
- No significant difference in vaccine delivery timing for Group B & C jennies that received all four boosters.

The data presented is preliminary and meant to provide a preview for future publication.
Preliminary Results: Individual Health and Social Impacts

Comparable injection reactivity rates – negligible changes in overall health and social groups

- Information available for monitoring and tracking social behaviors revolved mainly around mares and did not apply to jenny social dynamics.

- Lack of available resources for burro-specific attributes for individual identification.
  - Toolkit of burro/donkey resources and natural identifiers.

The data presented is preliminary and meant to provide a preview for future publication.
Preliminary Results Summary

- Wild jennies can be retreated with ZonaStat-H remotely.
- ZonaStat-H significantly decreased foaling rates after 24 months.
- Additional annual boosters sustained contraception.
- Observed injection site reactions resolved without veterinary intervention and did not affect contraception.
- No observed detrimental side effects to wild burro health, behavior, and social groups.

Photo credit: Grace Kahler/HSUS
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