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# MUSTANG POPULATION AND GROWTH

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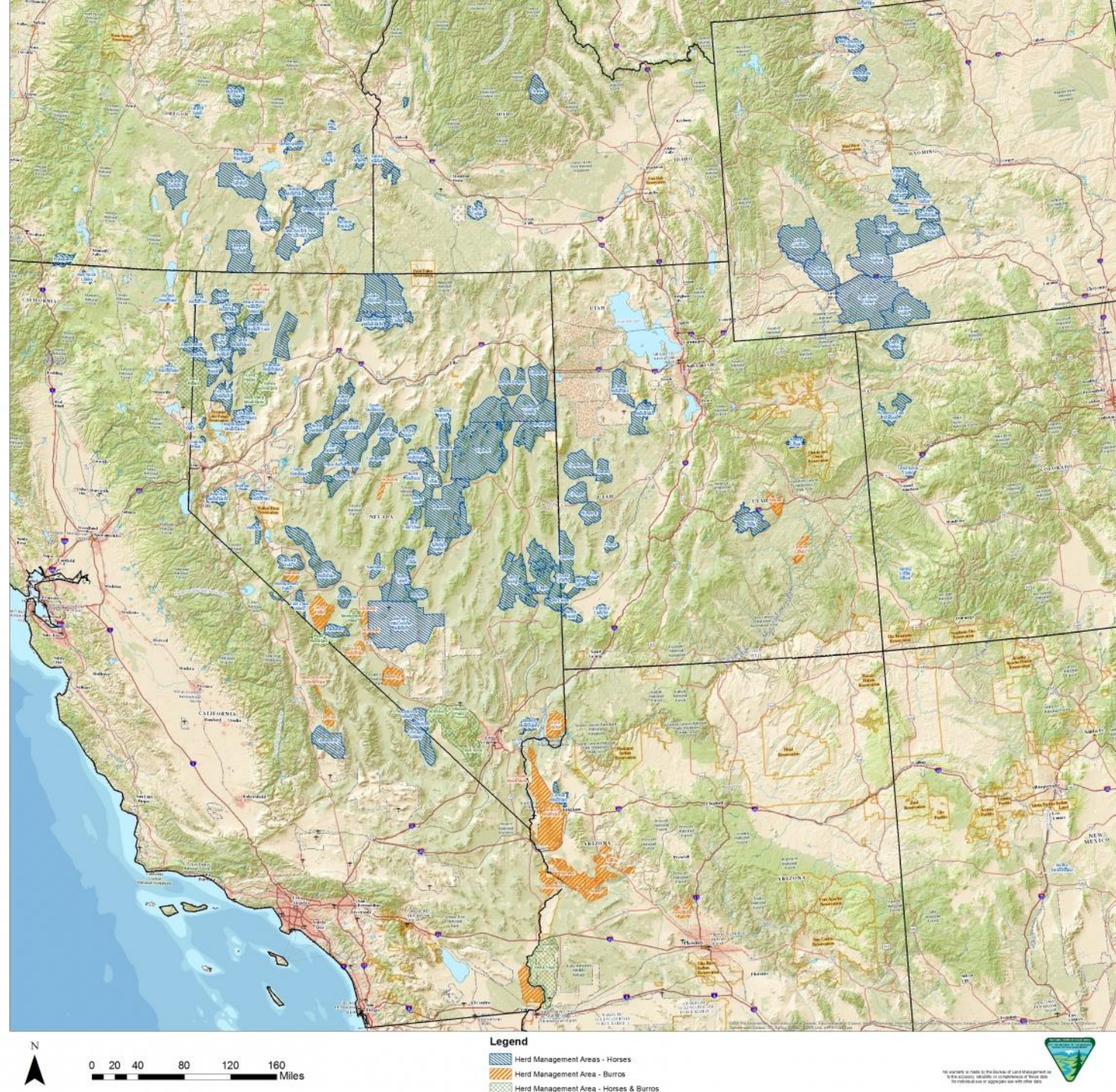




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# WHERE ARE MUSTANGS LOCATED?

- Across 10 western states
  - Arizona
  - California
  - Colorado
  - Idaho
  - Montana-Dakotas
  - Nevada
  - New Mexico
  - Oregon-Washington
  - Utah
  - Wyoming





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# FACTS ABOUT MUSTANGS

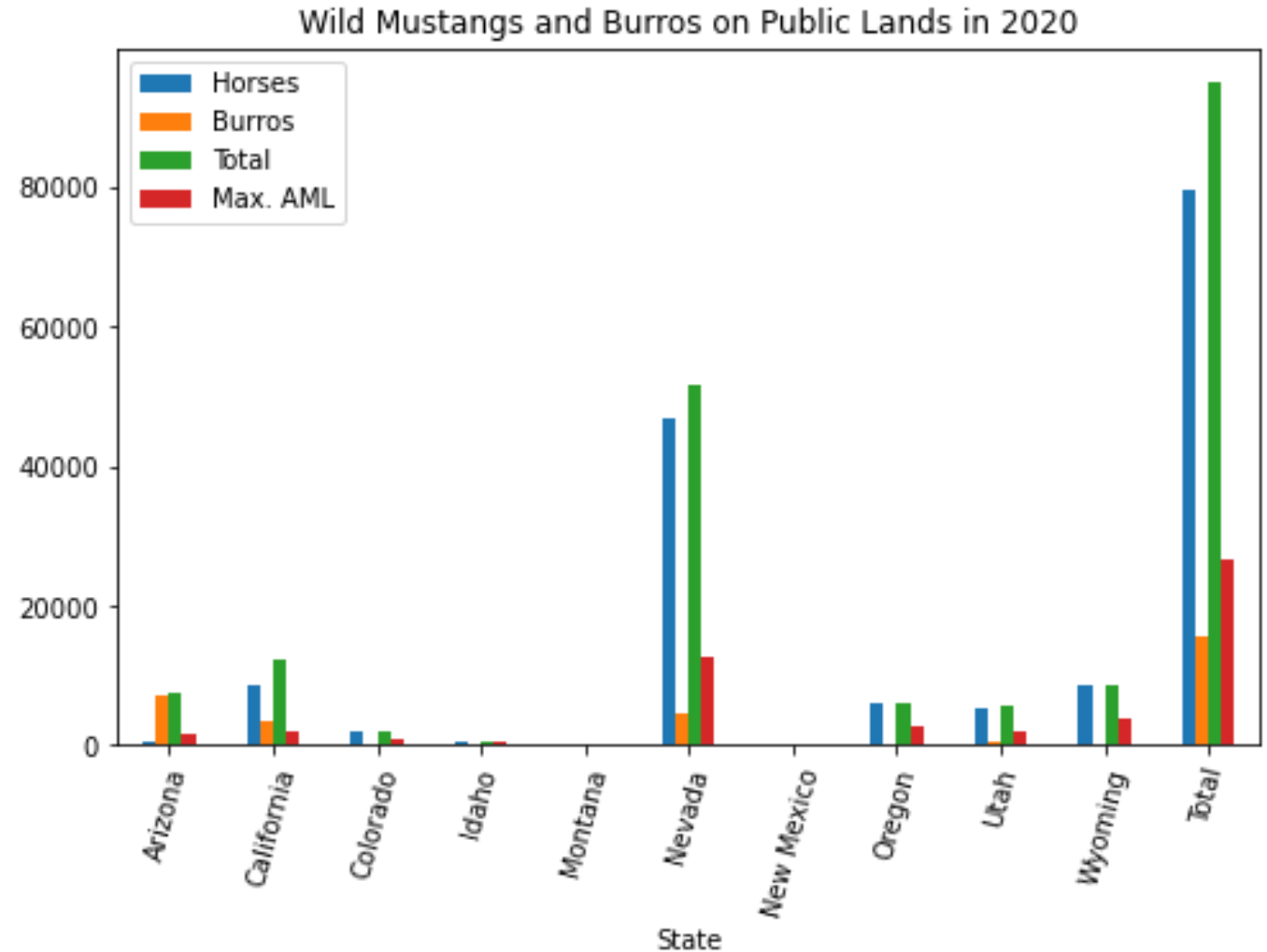
- They're typically around 13-15 hh
- They can travel up to 20 miles a day seeking food
- In the wild, they can have a lifespan of 15-20 years
- They have no natural predators
- They can double in population every 4-5 years



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# MUSTANG POPULATIONS ARE GROWING

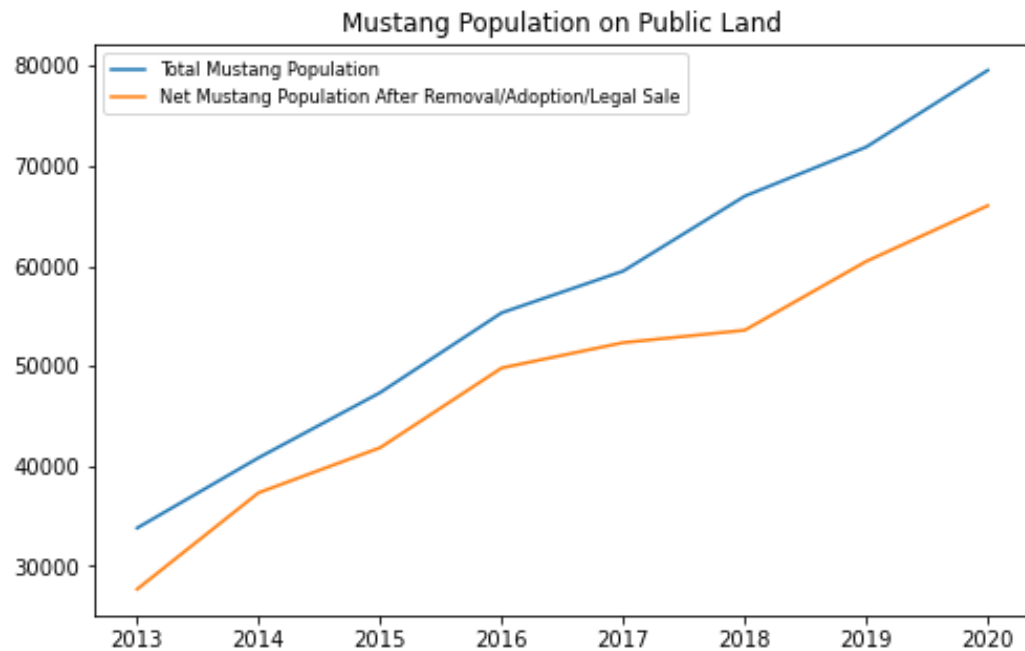
- Mustang mares have one foal with a gestation period of 11 months
- a herd can consist of up to 25 individuals
- Appropriate Management Level (AML), which is the number of wild horses and burros that can thrive in balance with other public land resources and uses







WHAT CAN THE BLM DO?



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- The BLM promotes the adoption of mustangs via horse events, such as the Extreme Mustang Makeover and the Mustang Magic Events, but as we can see, this isn't enough
  - This has led the BLM to look into contraceptives in hopes of stalling or slowing the mustang's population growth
  - Some of these consist of stallion vasectomies, and gelding procedures, mare IUDs, and mare contraceptives such as PZP, PZP-22 and GonaCon
  - Vasectomies and IUDs were found to be ineffective
  - More studies must be done to see the effect of gelding on herd dynamics

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# PZP AND PZP-22

- PZP is an immunocontraceptive made from pig ovaries. The foreign protein is attacked by the mare's antibodies. Some of these antibodies attach to the mare's sperm receptors and prevent fertilization. This effect can last for up to a year. Regular PZP is around 26 dollars per dose.
  - PZP-22 is similar. It is a combination of regular PZP and a form of pellet PZP that dissolves more slowly. The hope was that this PZP-22 would prevent fertilization for 22 months, however this was not the case. With a booster, the effect can last up to 3 years. PZP-22 is around 300 dollars per dose.
  - (they're administered by dart gun!)
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# GONACON

- Gonadotropin-releasing hormone (GnRH) immunocontraceptive vaccine
  - GnRH is a protein released in the hypothalamus and is part of the pathway that leads to the production of testosterone, progesterone and estrogen.
  - Essentially hormone blockers.
  - Can be used as one shot, but more effective with two doses.
  - EPA registered, but not for commercial sale
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HOLDING FACILITIES



# A Long-Term Holding Facility in Nowata Oklahoma

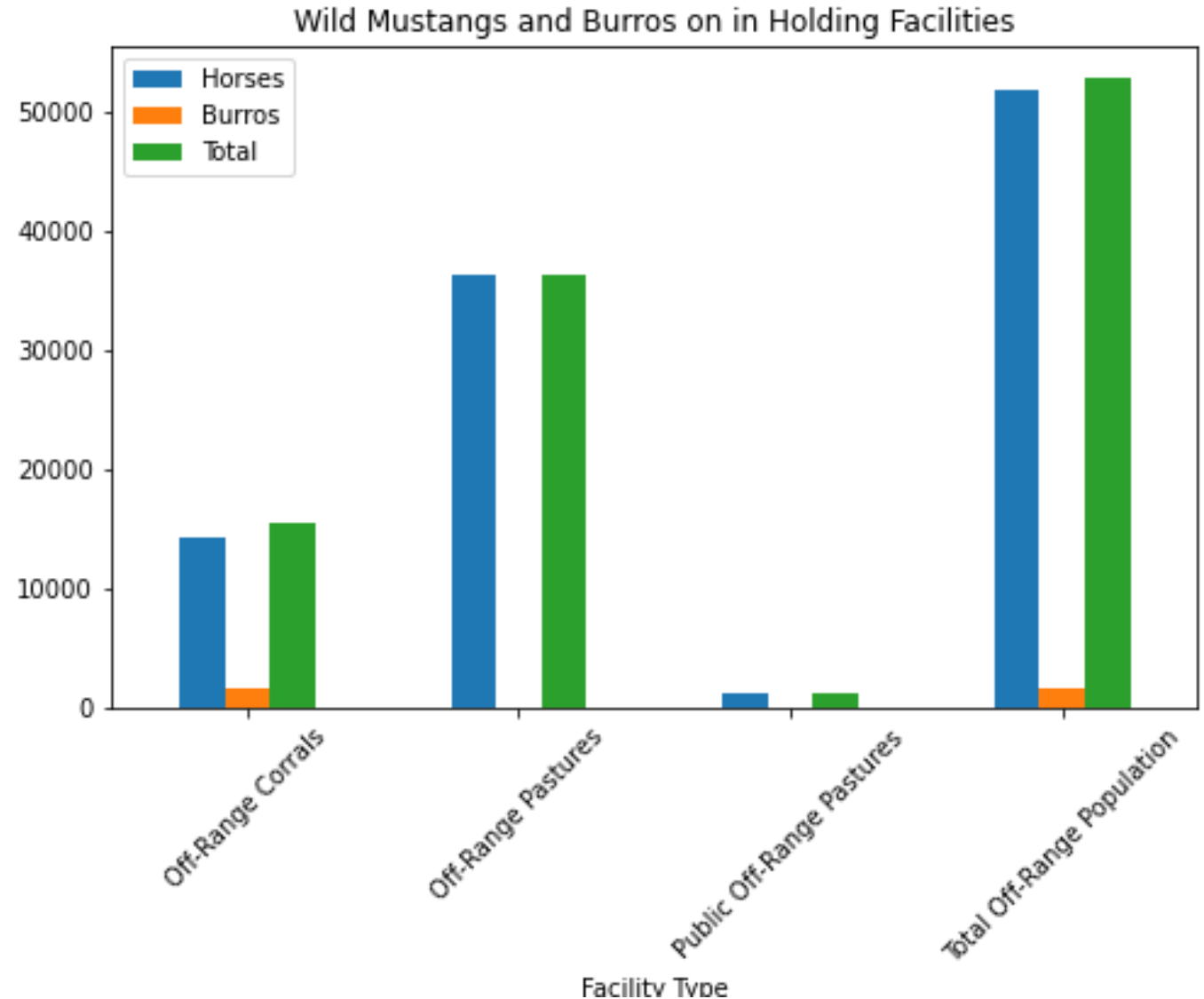


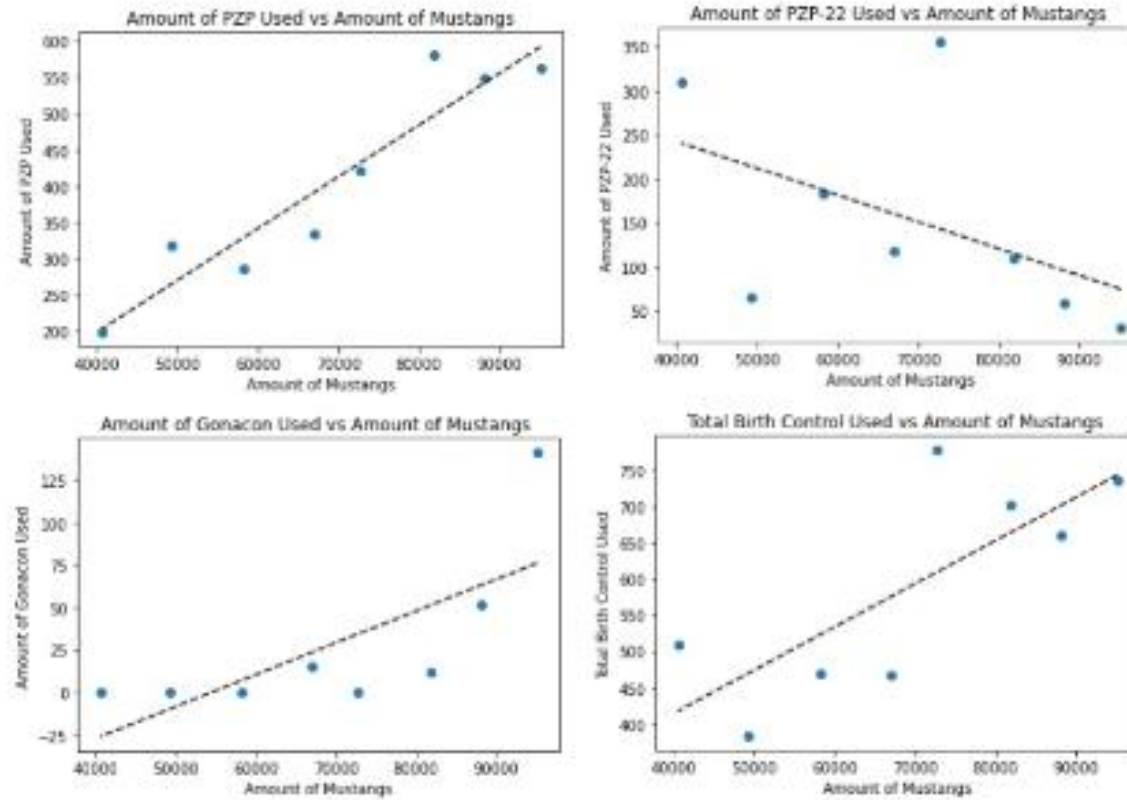


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LONG TERM HOLDING  
IS IDEAL, HOWEVER  
MOST PLACES ARE  
NEAR CAPACITY

- If a horse has gone through the adoption cycle 3 times or if it is over 10 years of age, it is put into long-term holding





| Type of Birth Control | P Value | R Value | Standard Error |
|-----------------------|---------|---------|----------------|
| PZP                   | 0.0004  | 0.944   | 0.001          |
| PZP-22                | 0.223   | -0.484  | 0.002          |
| Gonacon               | 0.040   | 0.728   | 0.0007         |
| Total                 | 0.024   | 0.771   | 0.002          |





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THE END

\*this is a picture of the BLM burro I almost purchased from the BLM's Online Auction Event, but was outbid last minute (isn't she cute?)