Wild Horse and Burro Aerial Survey Update
Background: Aerial Surveys
Simultaneous Double-Observer Method

- 2013 NAS report stressed the need to account for animals not seen on aerial surveys
- In 2014 BLM began using a Simultaneous Double-Observer Method that accounts for these animals
- By the end of 2016, most HMAs had been surveyed with this method once or more
- March 2020 USGS published SOP on the method
- SOPs codify survey method, so they are consistently applied
Background: Methodological Survey Support

• History of expert guidance/technical assistance on surveys
  - 2013-2015 USGS
  - 2015-2016 Internal BLM
  - 2016-2019 USGS
  - 2019-current Internal BLM

• BLM has now hired a Population Biologist—Michelle Crabb, who started in January.
  - Background in aerial surveys and abundance estimation techniques
  - Worked for AZ Game and Fish Research Branch for previous 15 years
Background: Aerial Survey Flights

• Three observes in a helicopter (or fixed-wing aircraft), plus the pilot
• Fly 150 to 400 feet AGL (just over 500’ for fixed-wing)
• 50 to 70 knots (95-120 for fixed-wing)
• Distances between flight lines vary based on conditions
WHB Aerial Survey Update

• Surveys Completed:
  - 43 HMAs surveyed in FY2020 (2 of these were infrared)
    Plus 10 HAs
  - 55 HMAs surveyed so far in FY2021 (as of June 1st)
    Plus 17 HAs, and 7 WHTs
    of these 5 HMAs and 2 HAs were infrared
• Surveys currently planned for remainder of FY2021
  - 15 HMAs, plus 3 HAs (1 of these will be infrared)
Simultaneous Double-Observer Analysis

- Survey analysis is transitioning from a contractor in 20-21 to being internal BLM
- Analysis method we use
  - Conducted in the statistical software called program “R”
  - R script allows for repeatable analysis
  - USGS validated
  - Available online

Key ideas:
- Observe horse groups
- Estimate each ‘seen’ horse group’s probability of detection, if the survey were repeated
- Correct for the estimated # of horse groups like the ones observed that did not get detected

A Look to the Future

- Continue to explore newer survey methods
  - Infrared
  - Remote sensing
  - Machine learning