

Memorandum

TO : Burro Files

DATE: June 15, 1979

FROM : John M. Morgart, Wild Horse and Burro Specialist

SUBJECT: Burro Inventory of the Tassi, Arizona and Gold Butte, Nevada Areas

In April and early May 1979, a wild burro population inventory was conducted in the Tassi, Arizona and the Gold Butte, Nevada areas. The area surveyed is under the combined jurisdiction of the Arizona Strip and Las Vegas Districts of the Bureau of Land Management and Lake Mead National Recreation Area of the National Park Service. Since the boundaries between Arizona and Nevada, and between BLM and NPS are political and not geographical, it was decided by the involved agencies to enter into a cooperative agreement for joint study and management of this burro population. Participants in the inventory were John R. Morgart of the Arizona Strip District and Terry Driver of the Las Vegas District.

STUDY AREA

The herd management area is located on BLM and NPS administered lands in the Tassi, Arizona and Gold Butte, Nevada areas. The burro range is bounded to the west and south by Lake Mead and the Colorado River and to the east by the Lower Grand Wash Cliffs and the Grand Canyon. The northern limit of the burro range is from approximately Mud Wash on the Overton Arm of Lake Mead southeast to St. Thomas Gap and the Arizona-Nevada border and then due east to the Grand Wash Cliffs.

The topography of the area is generally mountainous. Characteristic landforms adjacent to the lake include dry washes and their floodplains and desert bajadas. Elevations range from 5763 feet atop Jumbo Peak to approximately 1200 feet at the lake's edge.

Vegetation is typical hot desert shrub with creosote and bursage dominating at the lower elevations. Pinyon-juniper stands occur at the highest elevations.

Permanent water is available year-round from the lake. In addition, a number of perennial and seasonal springs are present inland from the lake.



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The burro inventory was a two-phase operation. In both phases three days were spent systematically flying the study area in a B-2 helicopter. In the first phase the object of the flight was to mark as many burros as possible with a CO₂ powered paint projectile pistol. The pistol fires a yellow paint pellet that breaks on contact, leaving approximately a 2" diameter mark. The doors were taken off the helicopter to facilitate marking and most burros were shot within 10-30' of the helicopter.

In the second phase of the inventory, the same area was flown a week later in the same pattern as in the first phase. The object of the second flight was to count all marked and unmarked animals encountered. From this data an estimate of population size was generated using a Lincoln-Peterson Index. A Lincoln-Peterson Index estimate is based on the ratio of marked to unmarked animals in a sample of observations from a population. The formula for the Lincoln-Peterson Index is as follows:

$$N = \frac{Mn}{m}$$

where:

N = population estimate
M = total number of animals marked
n = number of animals counted
m = number of marked animals counted

Given helicopter time restraints, the entire herd area could not be flown. Based on past sightings and known areas of burro concentrations, the decision was made to concentrate efforts on the Tassi allotment of the Arizona Strip and on the wash and floodplain areas bordering Lake Mead on Gold Butte, Las Vegas District. The central portion of the herd area in Nevada is primarily rugged mountains and burro use of this area is thought to be light.

A B-2 three-passenger helicopter was used to fly the inventory. The area censused was flown in a grid pattern with distance between parallel lines of 1/4 to 1/2 of a mile. Altitudes ranged from 200 to 800 feet.

Grid lines were flown until burros were spotted. All animals were counted and classified as to age class. In phase 1 of the operation, as many burros as possible were paint-marked. Usually it was possible to mark all animals in a herd.

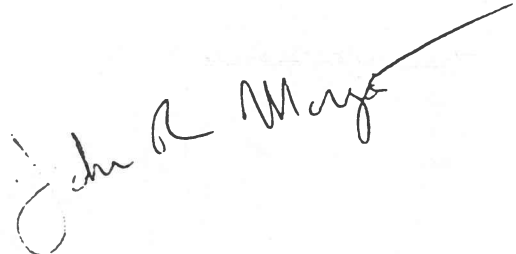
RESULTS AND DISCUSSION

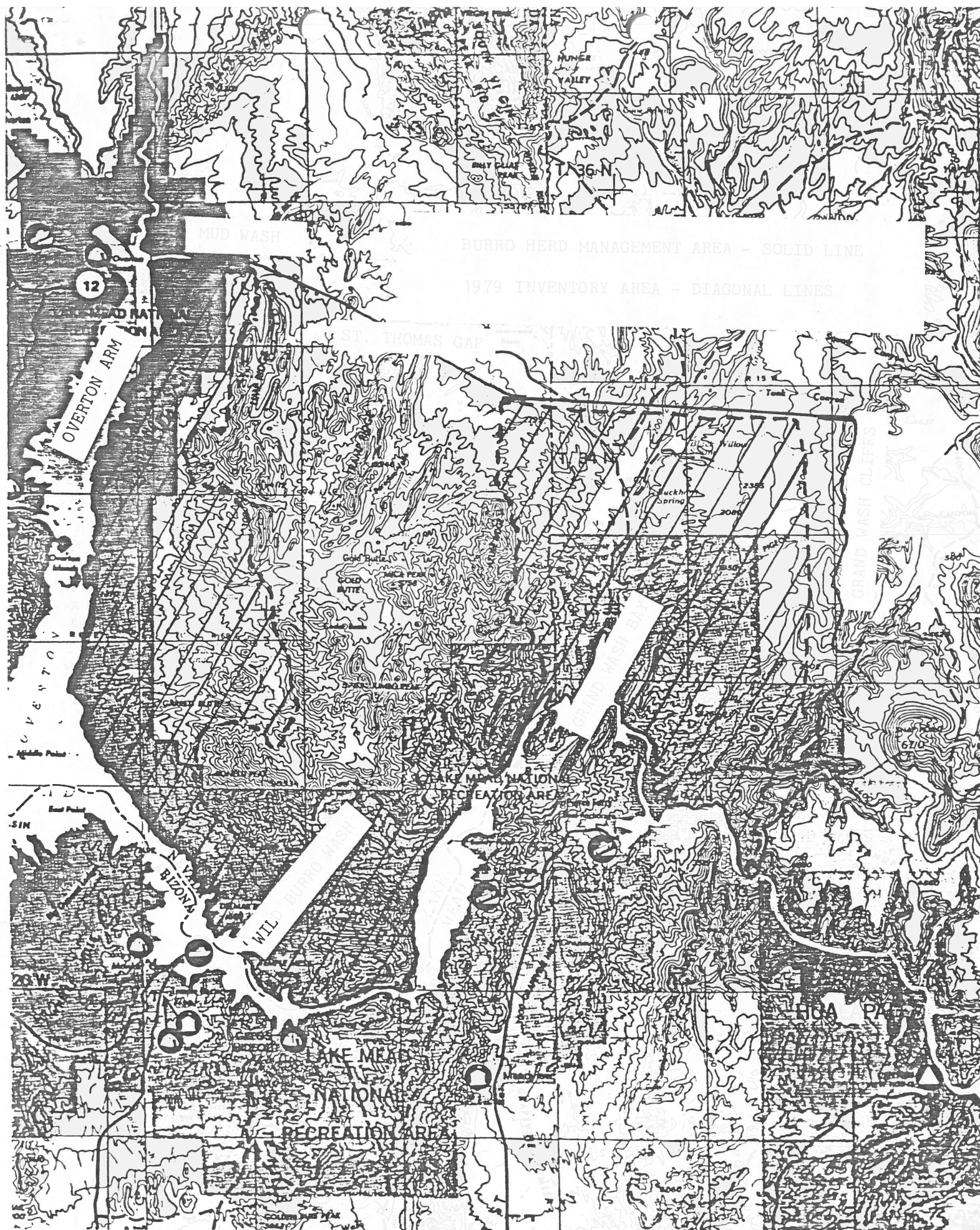
Between the dates of 25-27 April 1979, 171 burros were counted. A total of 161 were marked. On the dates 30 April to 2 May 1979, 237 burros were counted, of which 108 had been marked. Plugging these values into the Lincoln-Peterson Index equation a population of 353 burros was estimated. A population estimate for Arizona alone also was generated. The first week a total of 37 burros were seen and marked on the Arizona Strip and the Arizona portion of Lake Mead National Recreation Area. The second week 44 burros were seen, 18 of which had been marked. This yielded a population estimate of 90 burros in Arizona. Age ratios of all burros averaged 77 percent adults, 17 percent yearlings and 7 percent colts.

Most burros observed were within 3-5 miles of the lake's edge. The greatest concentrations of animals were on the floodplains and foothills between Mud and Wild Burro Washes and in the Grand Wash Bay area. Herd sizes ranged as high as 25 burros. In general, the animals looked healthy, possibly as a result of an abundance of annuals. Many jennies without foals were obviously pregnant.

Condition of the habitat within one mile of the lake was poor. A contoured appearance caused by excessive trailing as well as many dust wallows were evident. All of the resource damage cannot be attributed to burros, however, since the area is also used for domestic livestock grazing. In contrast, habitat conditions on the Tassi Allotment of the Arizona Strip were generally good. Burros in this area key in on springs in the Grand Wash, however, they are fewer in number and less concentrated than burros nearer Lake Mead.

JMORGART:emg





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Hacks Canyon Bighorn Sheep
Release Site

AS 50A-1

Allotment
Boundary
Fence

Willow Spring

Access
Route

Holding
pen

