Wild Burros in Arizona

Presented to the Native Plant Society

By the Arizona Game and Fish Department

December 17, 2009

Managing Today for Wildlife Tomorrow *Celebrating Our Success Stories*

A Brief History

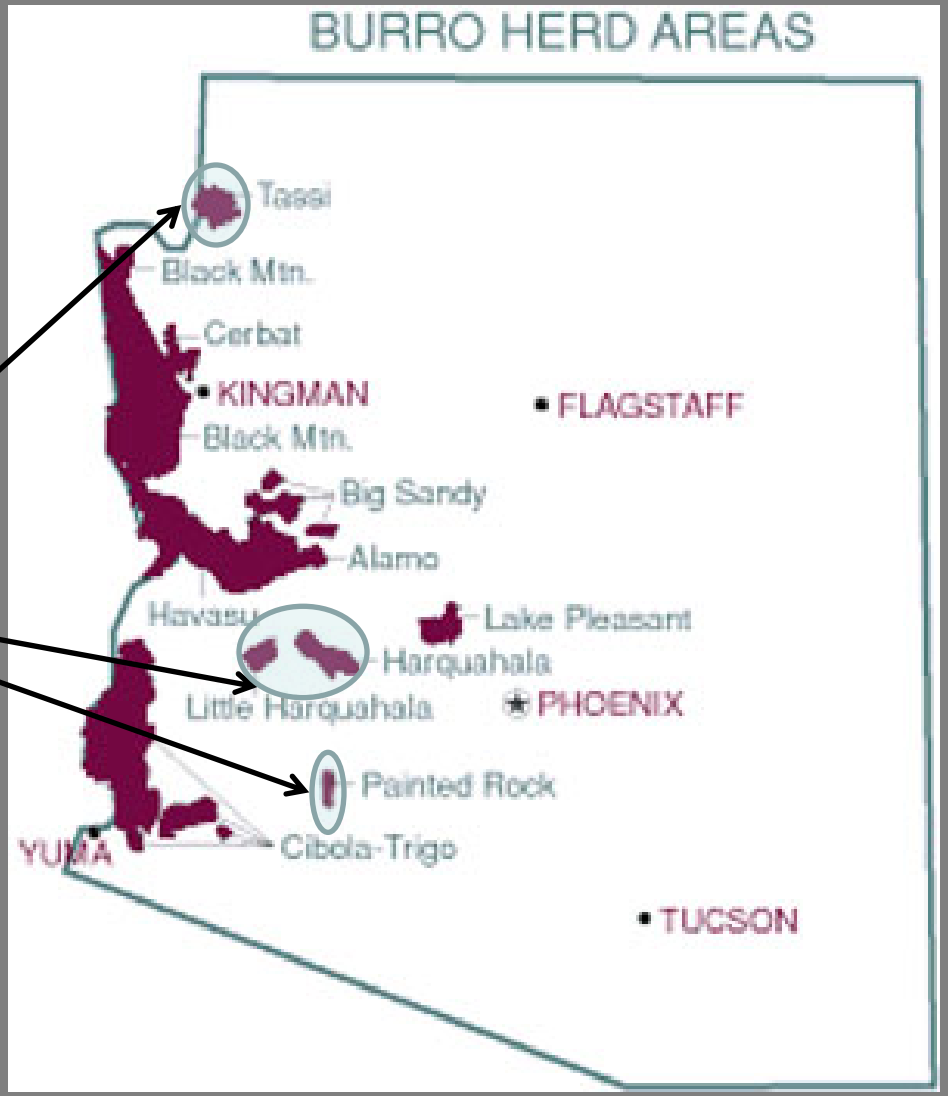
- Modern equines appeared in North America ~4 million years ago
- Extinction of all equines from North and South America ~10 thousand years ago
- Reintroduced by Spaniards in 15th century
- Not managed as wildlife by Arizona Game and Fish Department

The Wild-Free Roaming Horses and Burros Act of 1971

- "…are living symbols of the historic and pioneer spirit of the West…"
- Managed and protected on public lands by the Secretaries of Interior and Agriculture.
- Managed to achieve and maintain a thriving ecological balance on public lands.
- Determine Appropriate Management Levels (***AML***) on public lands; Herd Management Areas (***HMA***)

Herd Management Areas

Herd Management Areas Not Managed for Wild Horses and Burros



The Wild-Free Roaming Horses and Burros Act of 1971

- Excess animals must be removed from an area in order to preserve and maintain a "…thriving natural ecological balance and multiple-use relationship in that area."
- "…shall immediately remove excess animals from the range as to achieve Appropriate Management Levels."

Native Ungulates; No Upper Incisors

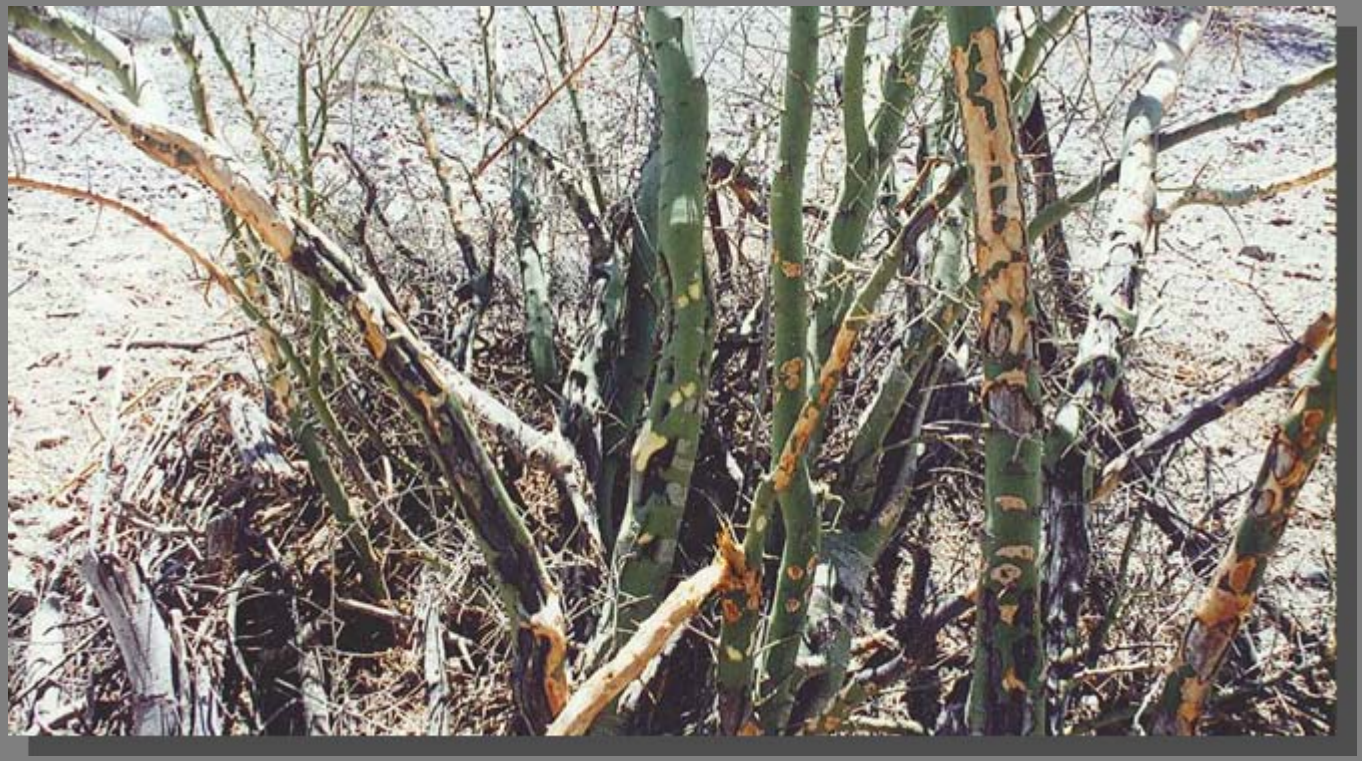
Bighorn Sheep Skull

Deer Skull

Horses and Burros; Well Developed Upper and Lower Incisors

Horse Skull

Vegetative Damage

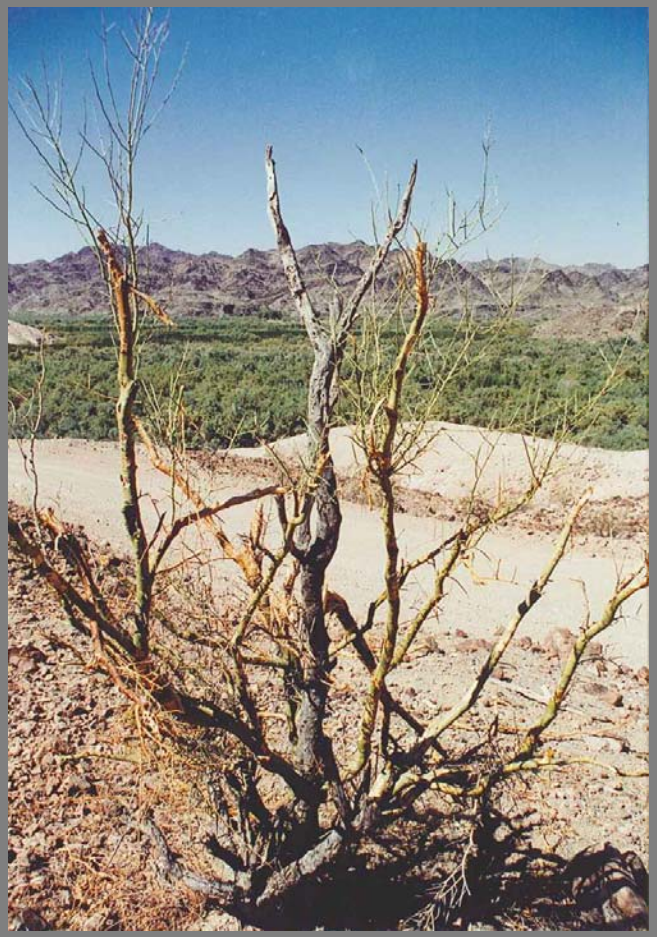


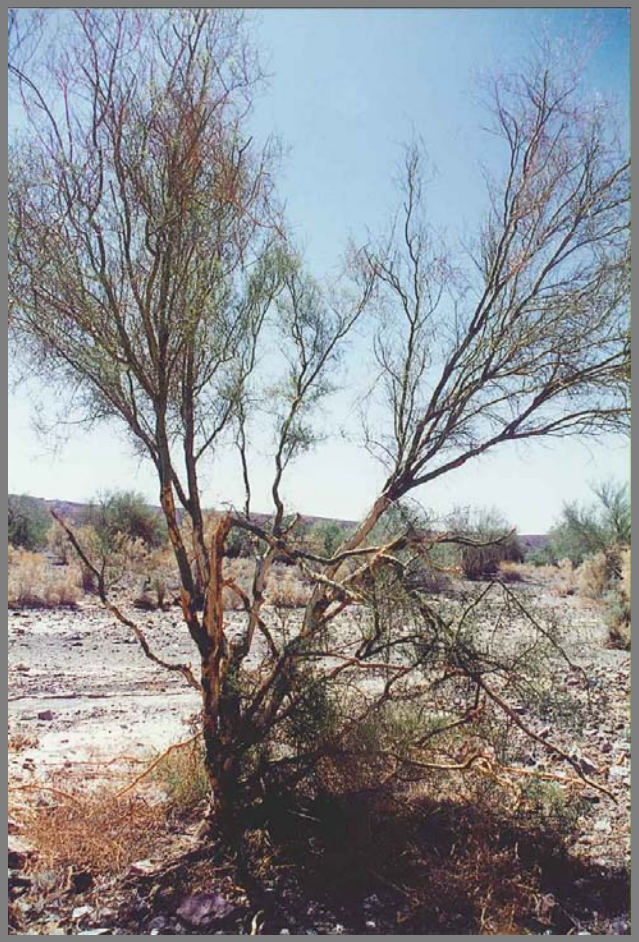
Tooth structure allows burros to use plants in ways that native wildlife cannot, and cause damage for which native plants have not evolved a defense or recovery process. This tree will likely die as a result of this damage.

Vegetative Damage

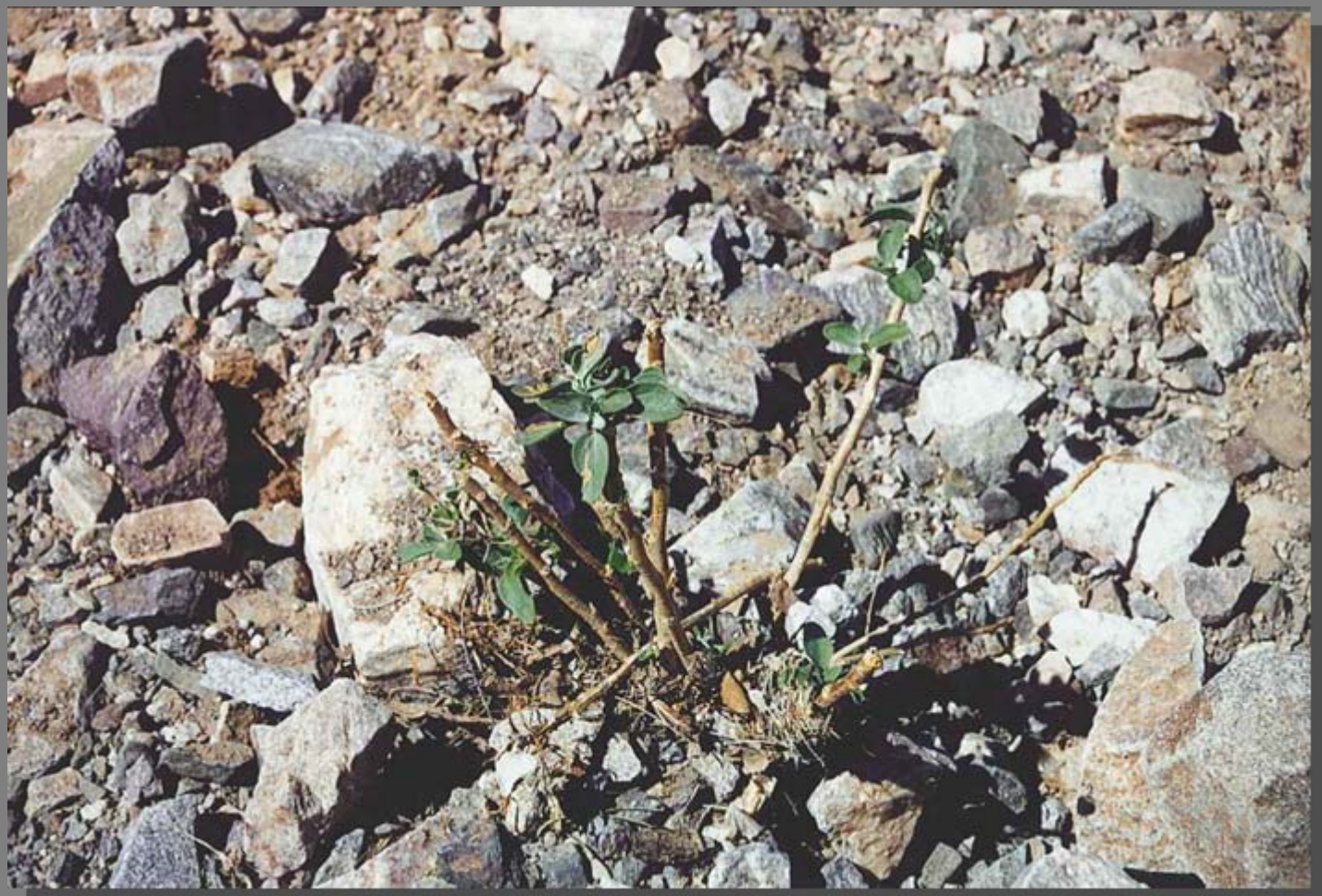
- Upper and lower incisors allow burros and horses to crop vegetation closer to the ground
- Can delay the recovery of grazed plants

Vegetative Damage





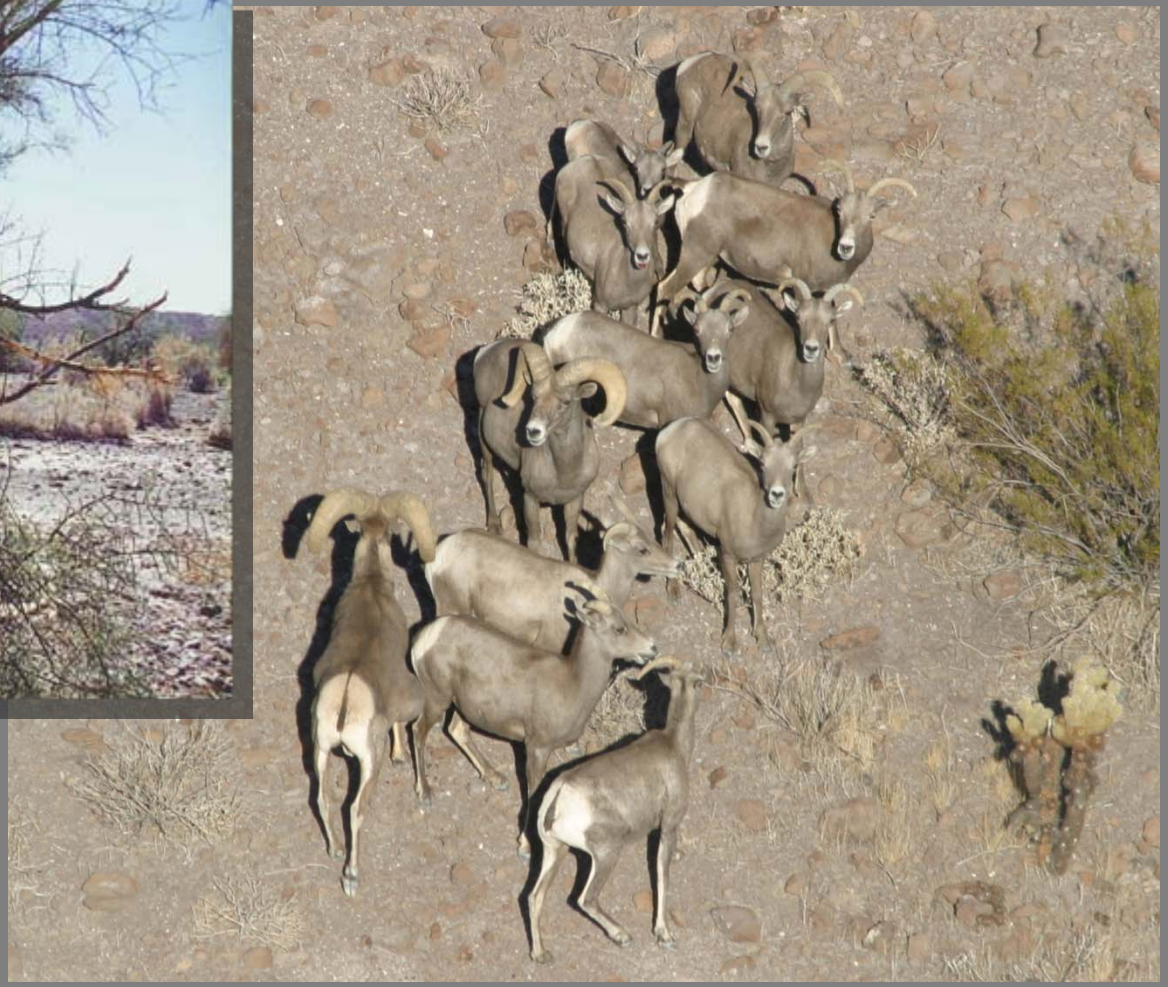
Vegetative Damage



Additional Factors

- No natural predators
- Direct and indirect competition with native wildlife
- Rapid population growth rates; annual recruitment of approximately 11- 20%
- Continue damaging vegetation through bark-stripping when foliage is unavailable
    - Native plants are not adapted

Direct and Indirect Impacts



Direct and Indirect Impacts

- Burros occupy habitat that cattle would not occupy.
- Impacts sheep and deer forage
- Impact springs and wildlife waters
- Dietary overlap with native species

Grazing Impacts

- Adult burros can eat 4.5 kg of forage per day
- Consume a wide variety of vegetation types
- Over-utilization impacts: reduced plant density and canopy cover - impacts concentrated near riparian areas and other water sources

Dietary Overlap

- Bighorn Sheep: green, succulent grasses and forbs are preferred by bighorn; browse is important all year, especially for populations in arid habitats. This is a direct dietary overlap with burros
- Other studies showing dietary overlap between bighorn sheep and burros:

Competition with Native Wildlife

- Burros may have a competitive advantage over bighorn sheep in times of scarcity
- Can persist on vegetation of lower nutritional quality-higher fiber content:
  - can digest faster and consume more vegetation/time

Competition with Native Wildlife

- Competition is more pronounced when resources are limited e.g. drought conditions

Competition with Native Wildlife

- Mule Deer: Avoid using water sources when burros are present
- Mule Deer: Dietary overlap found on Sheldon NWR - though more pronounced for bighorn
- Hares: Competition for important browse species: white bursage, foothills paloverde, creosote
- Quail and other birds: need vegetative cover for protection, particularly at water sources where they congregate
- Small mammals: Significantly reduced densities of small mammal in the presence of burros. Altered species composition

Wildlife Water Impacts

- Springs and other wildlife waters can be heavily impacted by burros
- Bighorn sheep avoid drinking from water sources used by burros
- It has been observed that the burro is dominant and bighorn and deer would not come into water while the burro was present. Burros will water during both daylight and darkness
  - Deer usually water at night. Bighorn almost always water during daylight hours.

Aerial Survey Bias

- Undercounting is the major problem of aerial surveys; results usually are negatively biased.
- Aerial surveys of large mammals consistently underestimate densities
- Aerial surveys, often used to estimate the density of wildlife populations, commonly underestimate population density because of animals being missed
- Underestimation is likely increased in rugged terrain and dense riparian cover

Watershed Damage

Figure 6. Burro trailing around a spring. The environmental impacts of trailing are increased when burro activity is concentrated on sloping terrain. Note the terracing effect of the multiple trail systems leading into this heavily used spring.

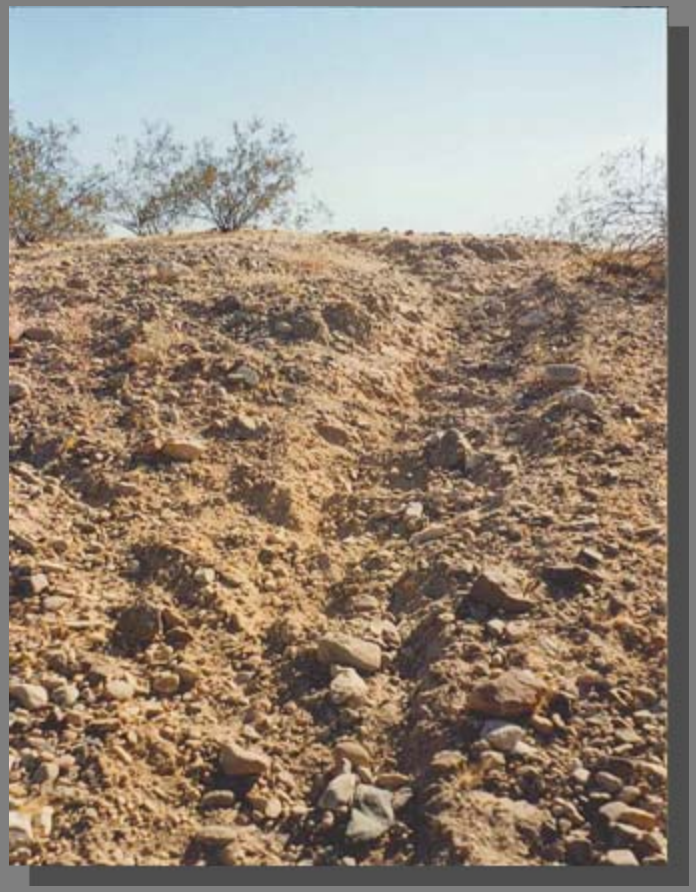
Site Specific Damage

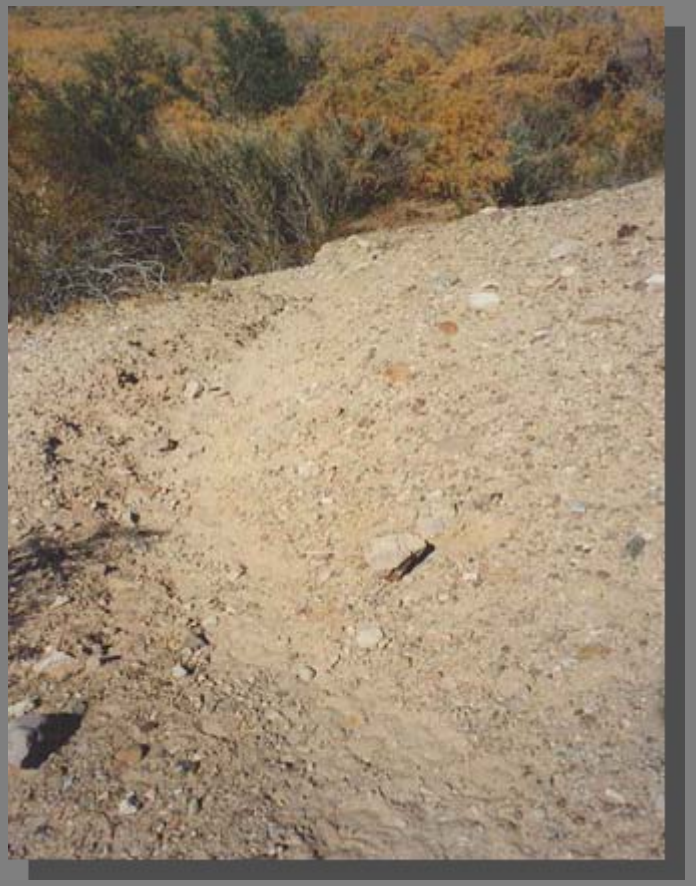
•Burro wallow (dusting area)
•Burros will congregate in areas where soil conditions allow the formation of these relatively deep wallows. Soil profiles have been disturbed as deeply as 30 cm below the ground surface. Note the total absence of herbaceous vegetation and the dwarfed appearance of the few remaining perennial plants.

Cultural Resource Damage

Trailing damage by burros.

Cultural Resource Damage





Trail damage at an “ash mound,” where native Americans cremated their dead.

Impacts to Sensitive Habitats

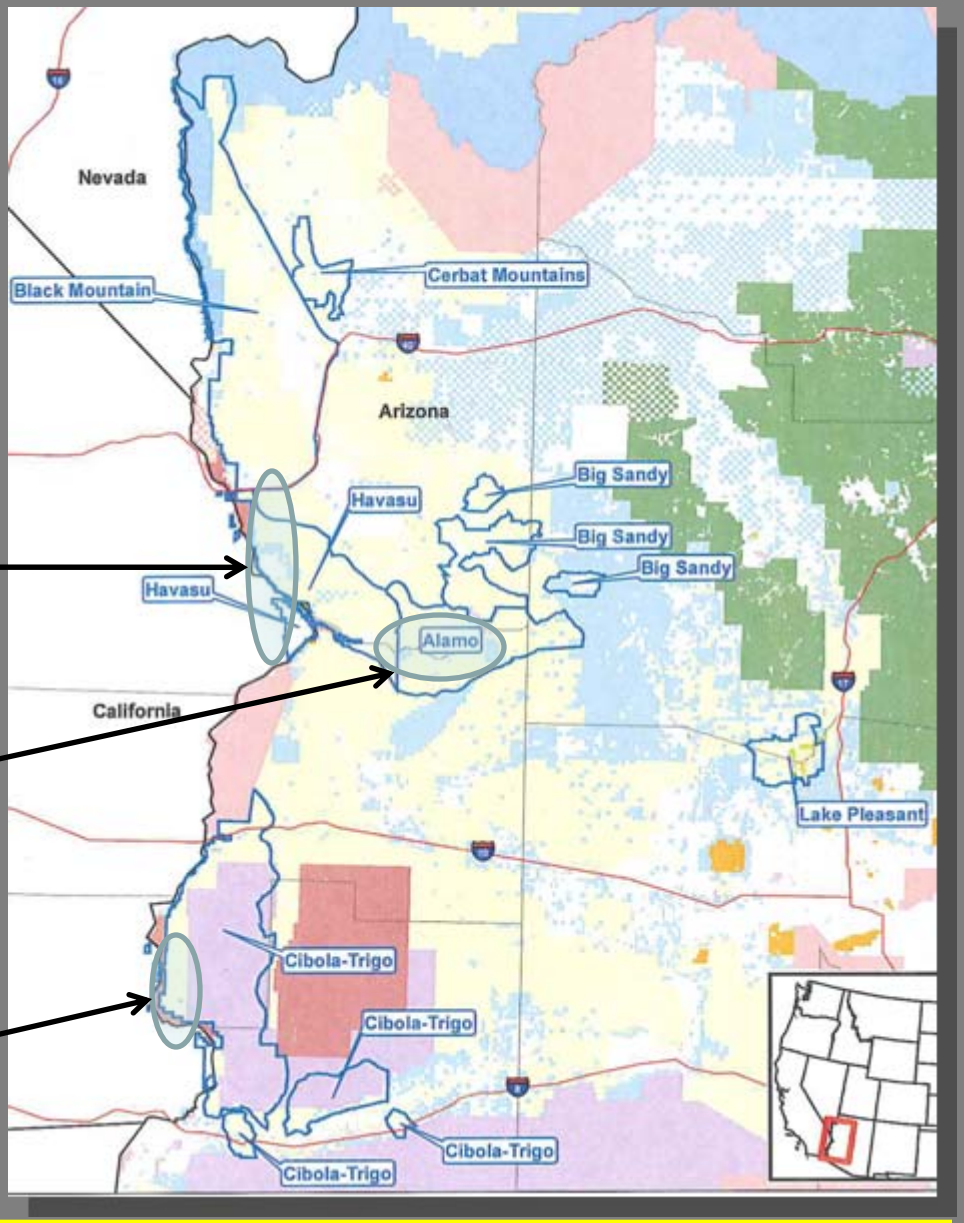
- Burros managed at AML and within HMAs will cause habitat damage.
- When the population is above AML or expands out of the HMA, irreparable damage often occurs in the most sensitive areas such as national wildlife refuges and state wildlife areas.

Sensitive Riparian Areas

Havasu NWR

Alamo Lake Wildlife Area/State Park

Cibola/Imperial NWRs



Alamo Wildlife Area

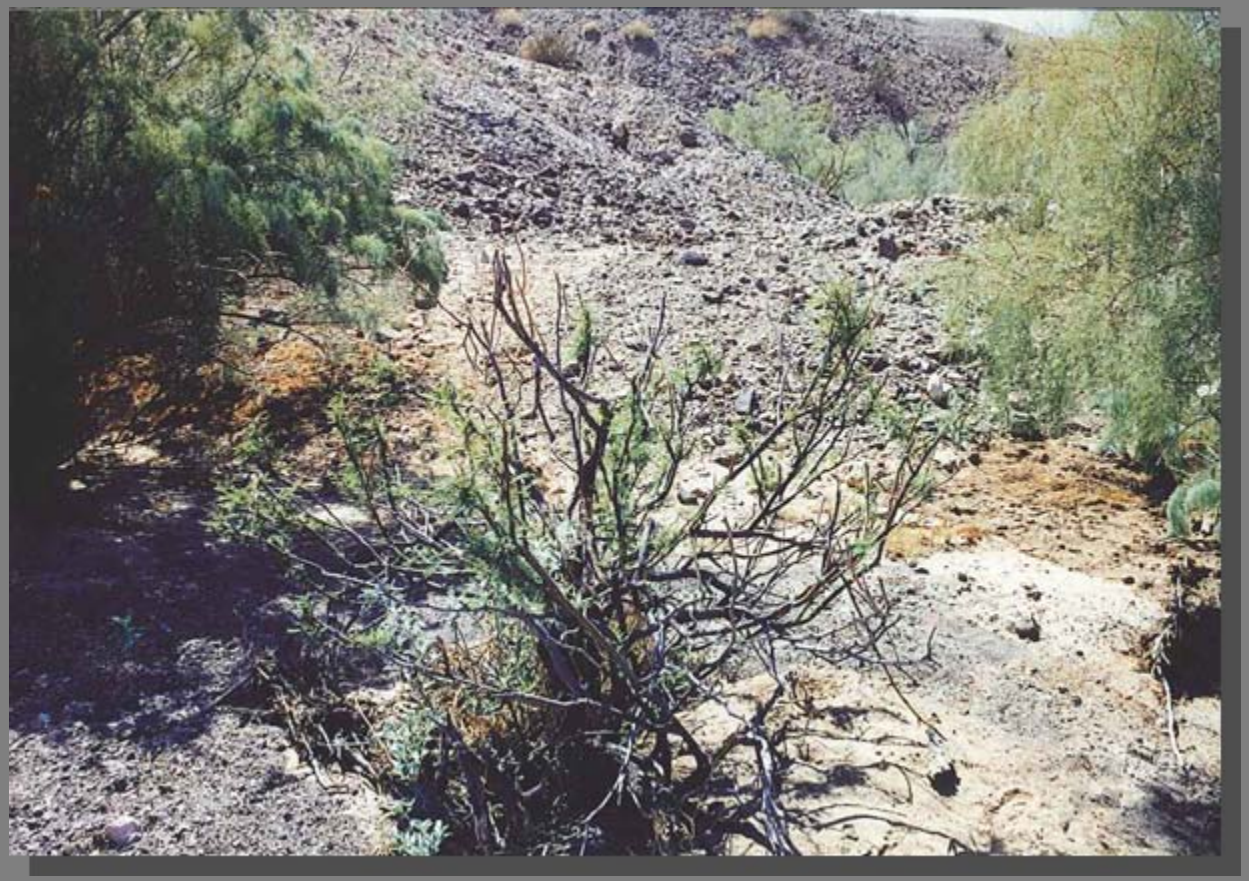
Alamo Wildlife Area

Riparian Vegetation and Wildlife

- Impacts to listed, sensitive, and riparian wildlife species:

Vegetative Damage

Vegetative Damage



Current Burro Populations

Herd Management Area	2006 Burro Population Surveys	2009 Burro Population Estimates*	Burro AML	# Above AML (Percentage of AML)	Planned Surveys	Planned Removals
Alamo	158	240	160	+80 (150%)		
Big Sandy	240	365	139	+226 (263%)		
Black Mountains	478	727	478	+249 (152%)		2010
Cerbat Mountains	0	0	0	0		
Cibola-Trigo	175	266	165	+101 (161%)		2010
Havasu	82	38	166	-128		
Lake Pleasant	344 (2008)	396	208	+188 (190%)		2010

*Burro population estimates far exceed AML in most areas, even using a conservative 15% annual recruitment rate.

Adoption and Long-Term Holding

- In FY2008, holding costs exceeded $26 million
  - 75% of BLM's Horse and Burro fiscal appropriation

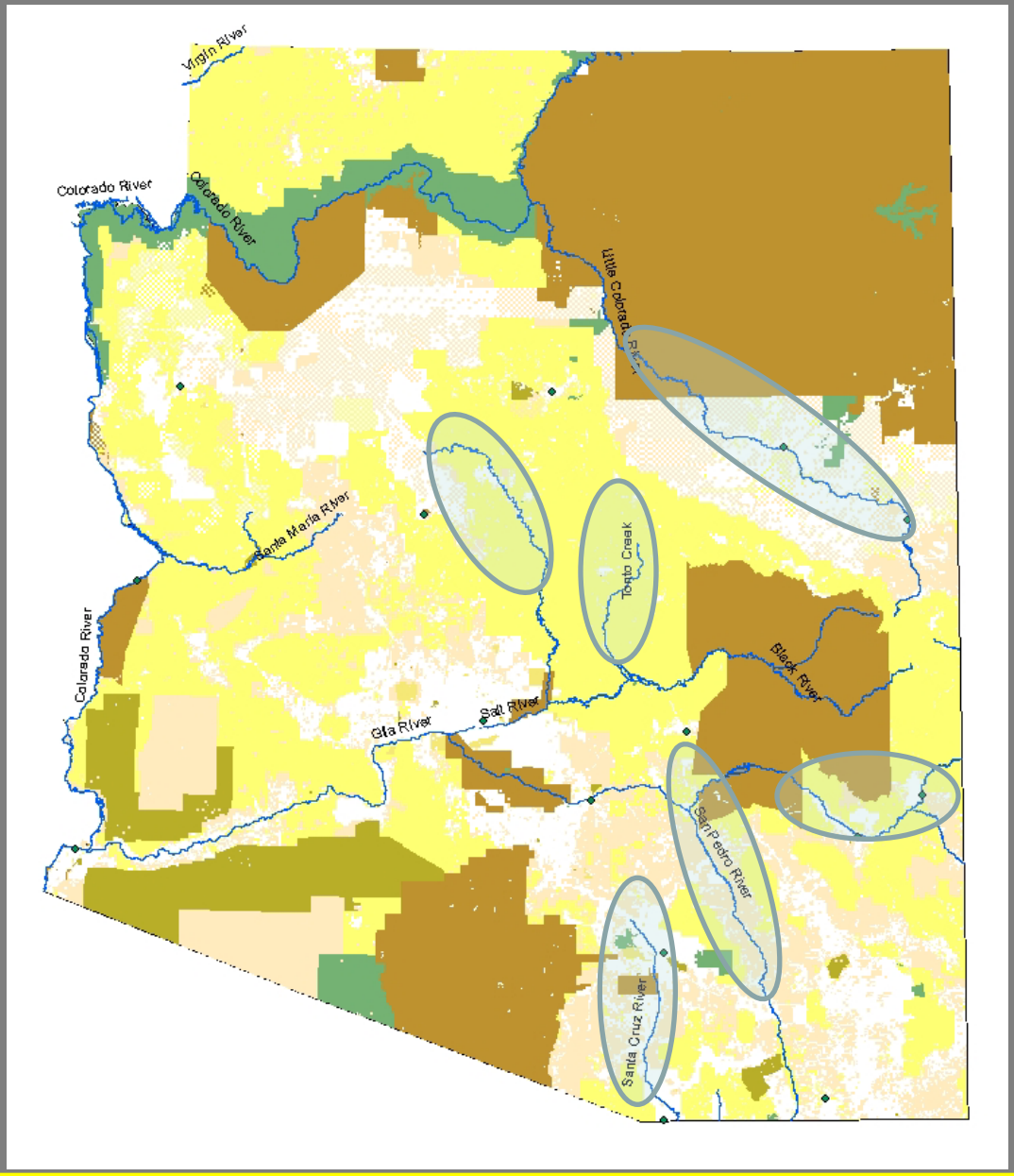
H.R. 1018 and S. 1579 – Details

- Wild horse and burro range expansion and relocation to areas not found in 1971
- Require exhaustion of all practicable options before capture and removal
- Limit holding time to 6-months
- Require exclusive use areas
- Prohibit destroying old, sick, and lame animals for which adoption demand does not exist
- Require adoption demand prior to capture and removal

H.R. 1018 and S. 1579 – Impacts

- Increase intensity and scope of ecological, fiscal, resource, management impacts
  - Greatly increase horse and burro populations, range, habitat damage, management costs
  - Focus on single-species management above native wildlife
  - Management focused on population and range expansion

The population range for horses and burros and their corresponding impacts would expand beyond current HMAs into additional sensitive areas that are currently precluded from occupation.

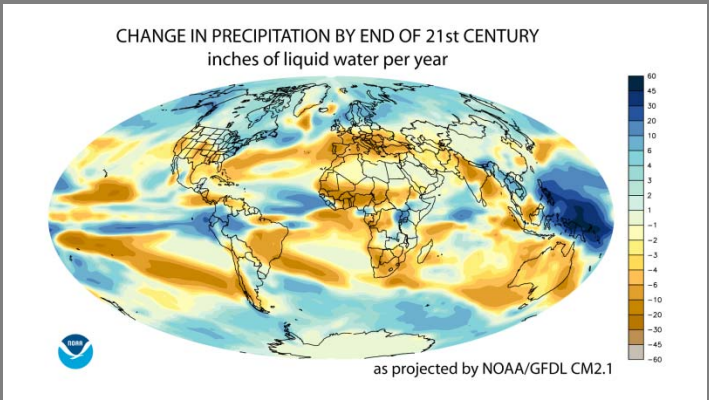


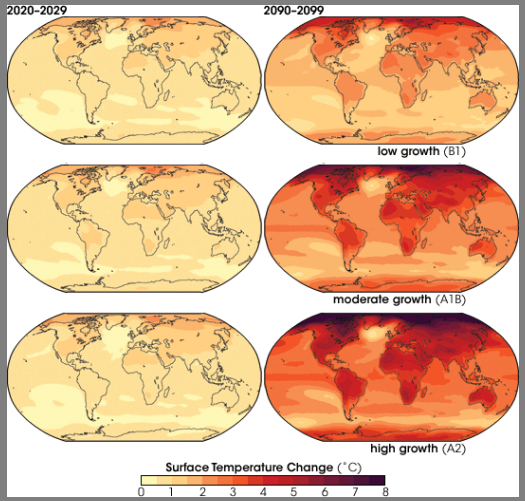
H.R. 1018 and S. 1579 – Conclusions

- ***Catastrophic consequences for native fish and wildlife habitats and populations***

The Future?

- Climate change
- Drought
- Wildfire
- Exotic vegetation
- Human Population growth





General Conclusions

- Wild horses and burros occupy very fragile, sensitive, and important habitats and cultural sites.
- Burros and native Arizona plant species did not evolve together, resulting in excessive damage.
- Expansion of burros beyond AML or outside of HMAs comes at a high ecological cost.
- Arizona Game and Fish Commission formally opposes currently-proposed legislation due to impacts to native wildlife and habitats.

Thank You!

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Questions or Comments?

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