

THE USE OF ABANDONED MINES BY BATS IN COLORADO: THE OTHER PART OF THE WNS ISSUE

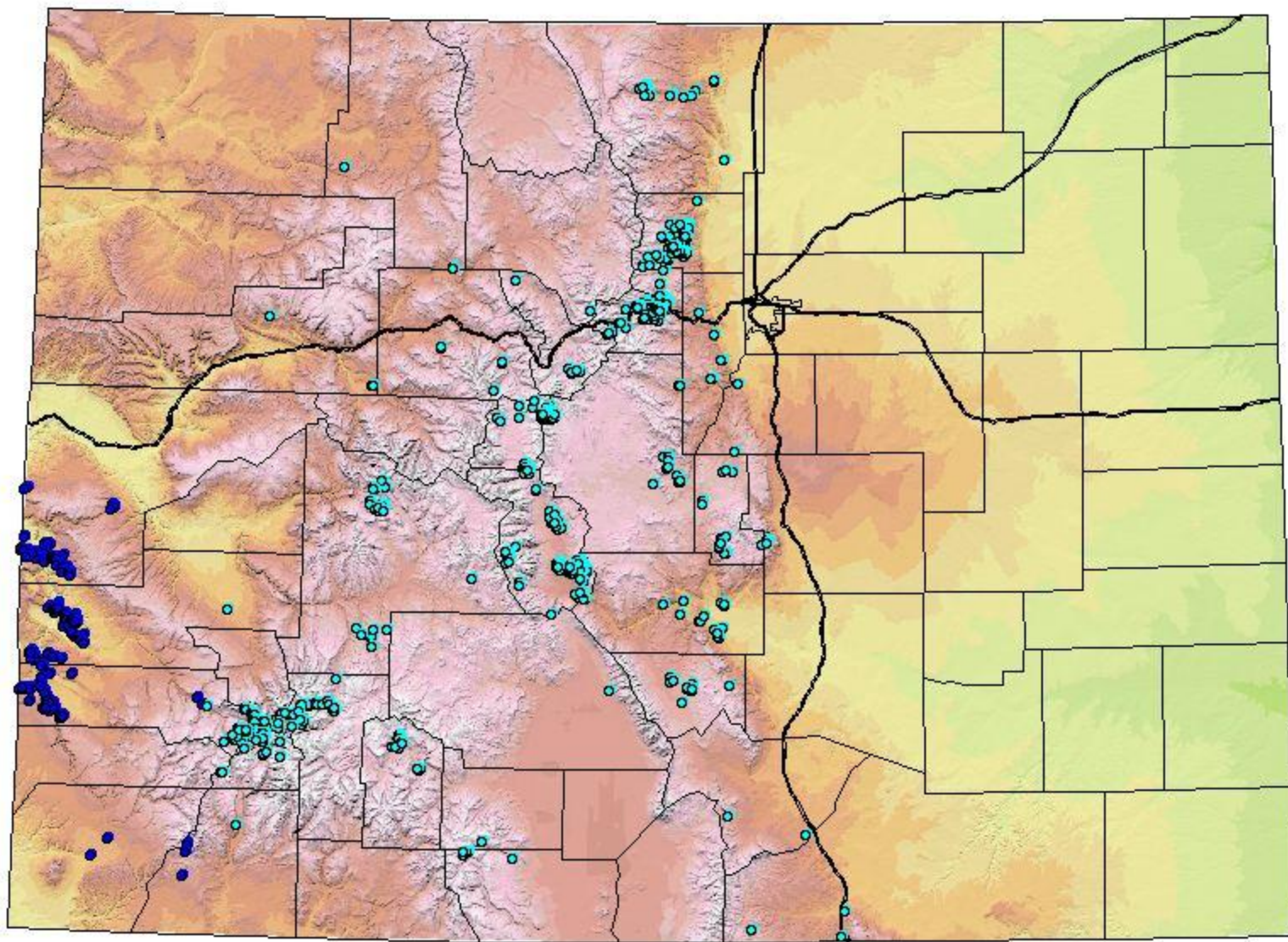
Kirk Navo

Caves and Mines



AML Program started in early
1980's - BIMP started in 1990

Mine Distribution in BIMP



Why is the Mine work Important?



What have we Learned from Inactive Mines?



Insights into species use of underground habitat in Colorado.

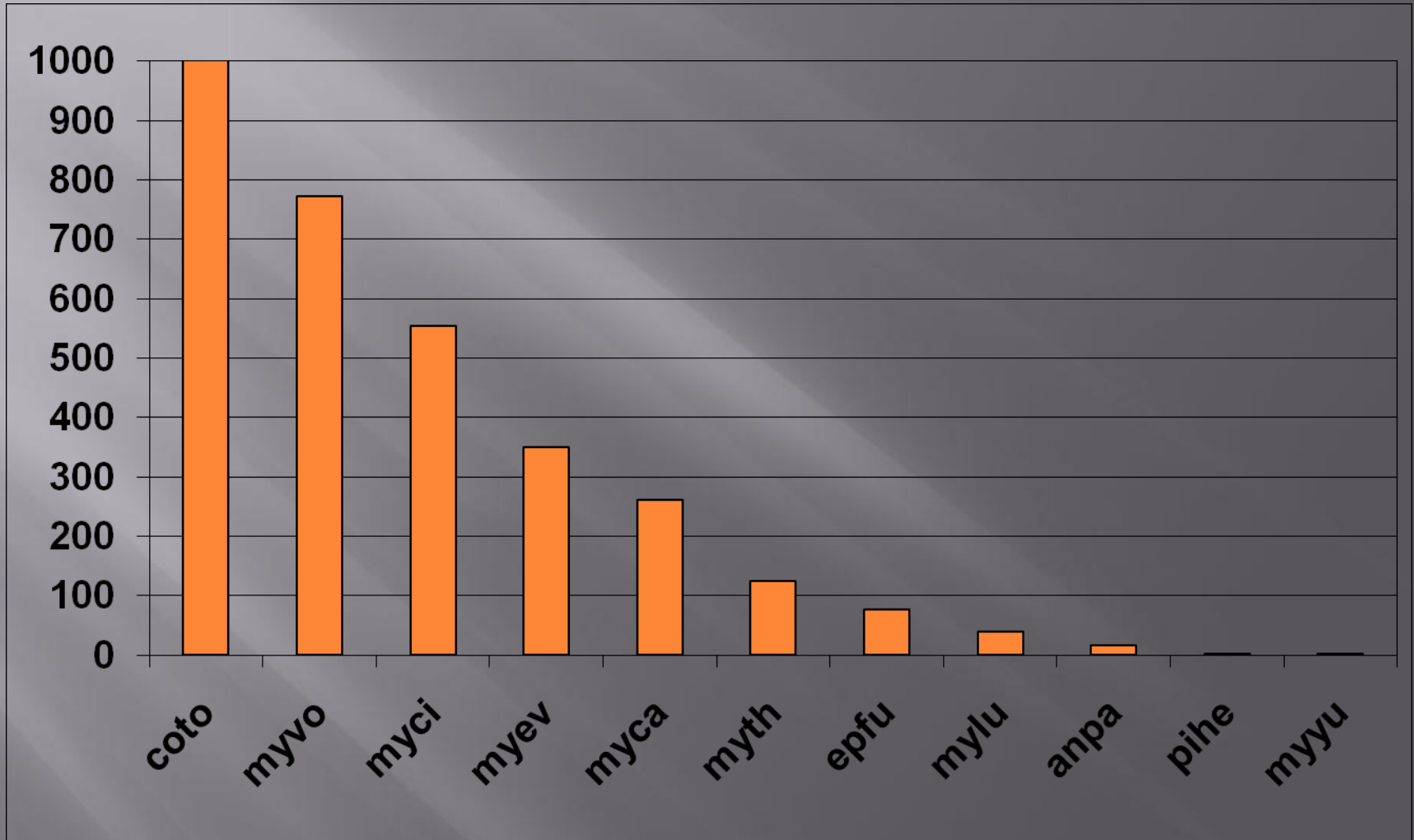


Bats

- ▣ Captured 4,142 bats.
- ▣ Documented 13 species using mines.
- ▣ >1528 TBE bats (37% of species using mines)
- ▣ 400 + roosts of TBE bats.
- ▣ 4 species make up 81% of captures at mines.
- ▣ Over 50% of mines have evidence of some bat use.



Species Using Mines



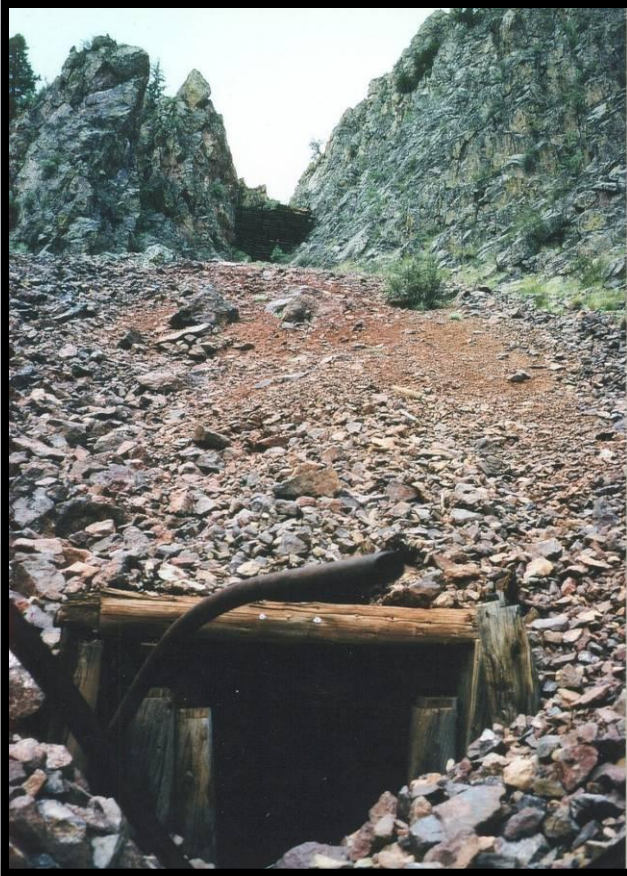
Insights into the types of roosting use in Colorado.



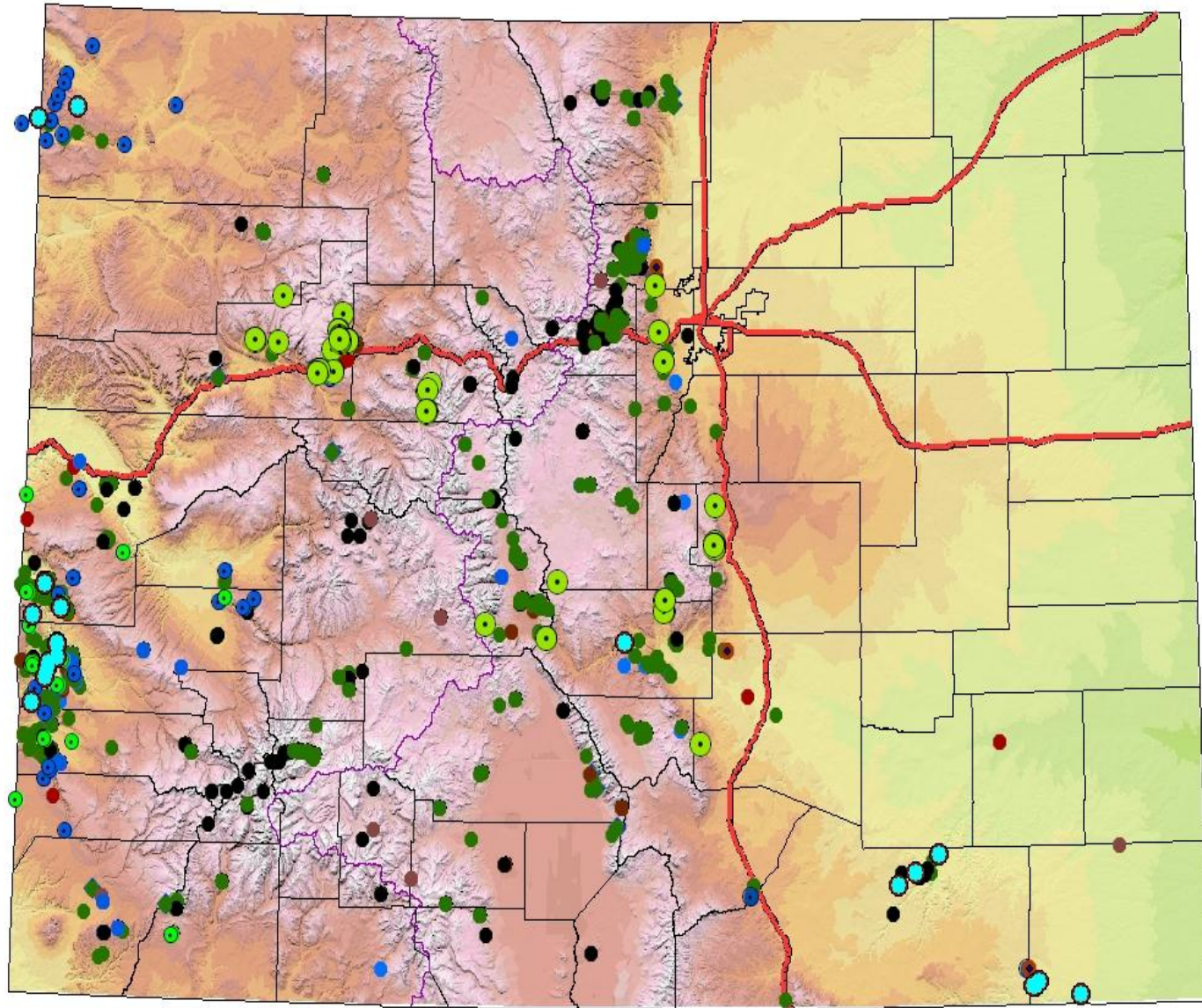
Most Significant Roosts are Fall / Winter Roosts



Insights into the Distribution of Bats & Roosts in Colorado.



Bat Distribution Records



Elevations and Bat Use

- ▣ Evaluated >4,872 mines statewide.
- ▣ Elevation of mines range from 4,960' - 12,842'. Avg. = 8,021 ft.
- ▣ Bats were documented using mines as roosts at elevations ranging from 5,041 to 12,160 feet.
- ▣ The average elevation of mines used as roosts was 7,257 ft.



Breakdown of roosts & Elevations

- ▣ 11% of mines from above 9,600' elevation had captures.
- ▣ Only 5% of mines above 10,000' had captures of bats.



Provides good start for monitoring and Surveillance of WNS in Colorado.

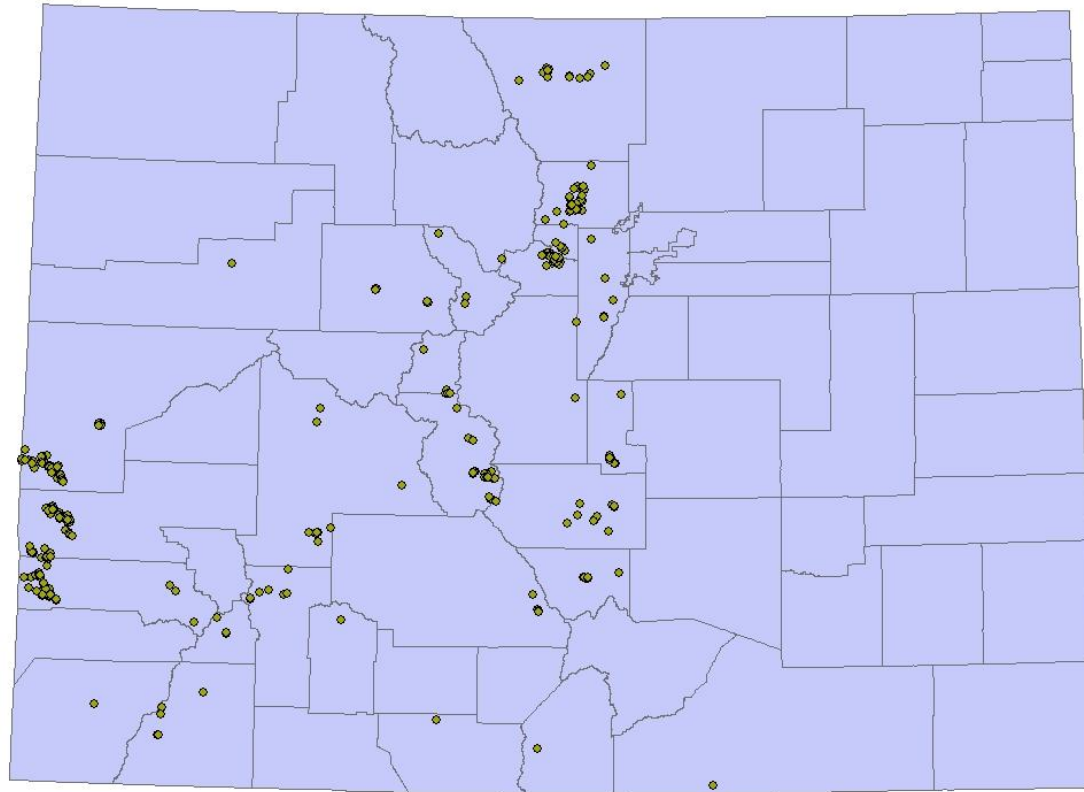


Bat Gates

- ▣ **830+** Bat gates installed or pending.
- ▣ *Provides Many Known Roost Sites for Monitoring & Surveillance for WNS!*



Bat Gates in Colorado



Reduces the knowledge gaps in Colorado.

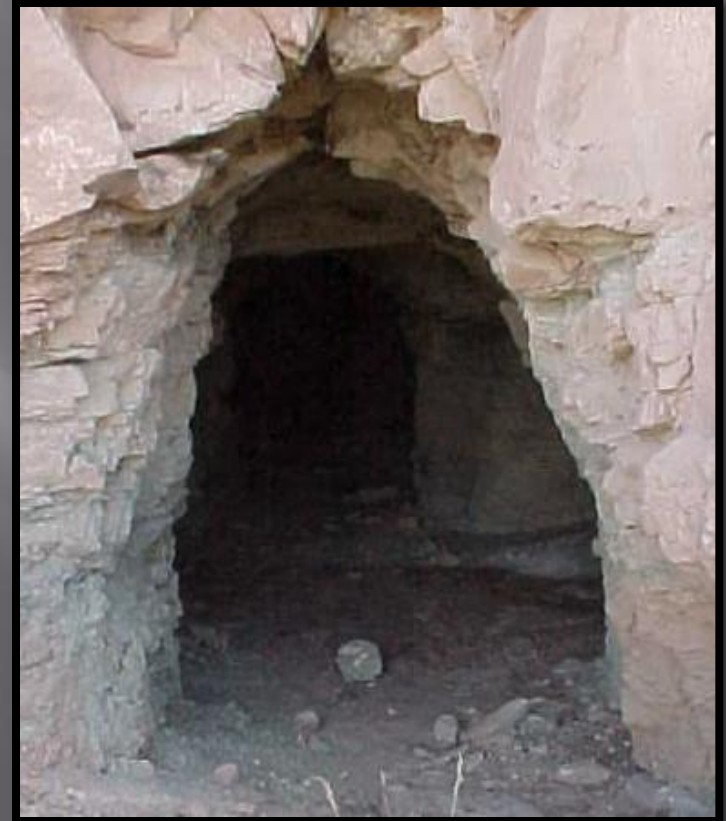


Roosting Ecology – Microclimate



WNS - Temperature

- ▣ Temperatures are within the known range of WNS in the East. (34° – 59° F)
- ▣ Avg. Temperature at Fall & Winter roosts sites is 40.6° F.
- ▣ Avg. Temperature at winter roosts sites is 39.1° F.
- ▣ Avg. Temperature at Fall roosts sites is 46.4° F.



WNS – RH

- ▣ RH data not very robust, but early indications suggest our RH% is not as high as Eastern WNS infected sites.
- ▣ Data set from maternity roosts, indicates mostly < 90%, peaks in August.
- ▣ More RH% data is going to be obtained in Colorado starting this fall.



The Most Common Species Using our Mines

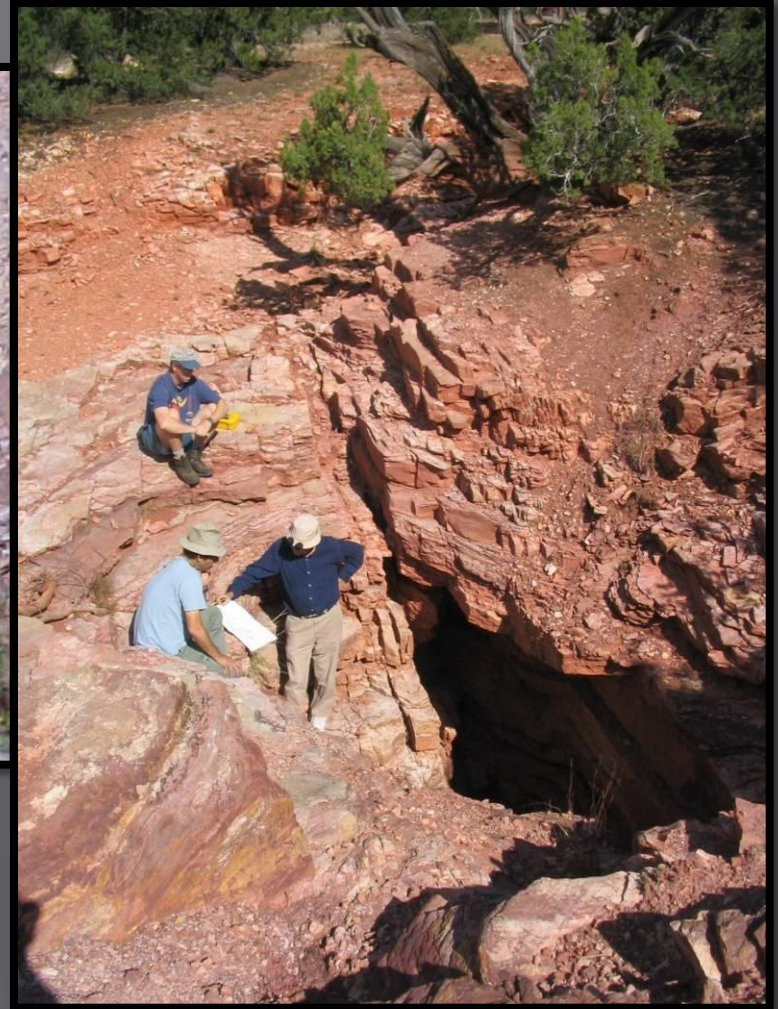
- ▣ Townsend's big-eared bat.
- ▣ Cave / Mine Obligate species.
- ▣ Species of Special Concern.
- ▣ Sensitive Species: BLM, USFS.
- ▣ COTO not yet impacted by WNS?



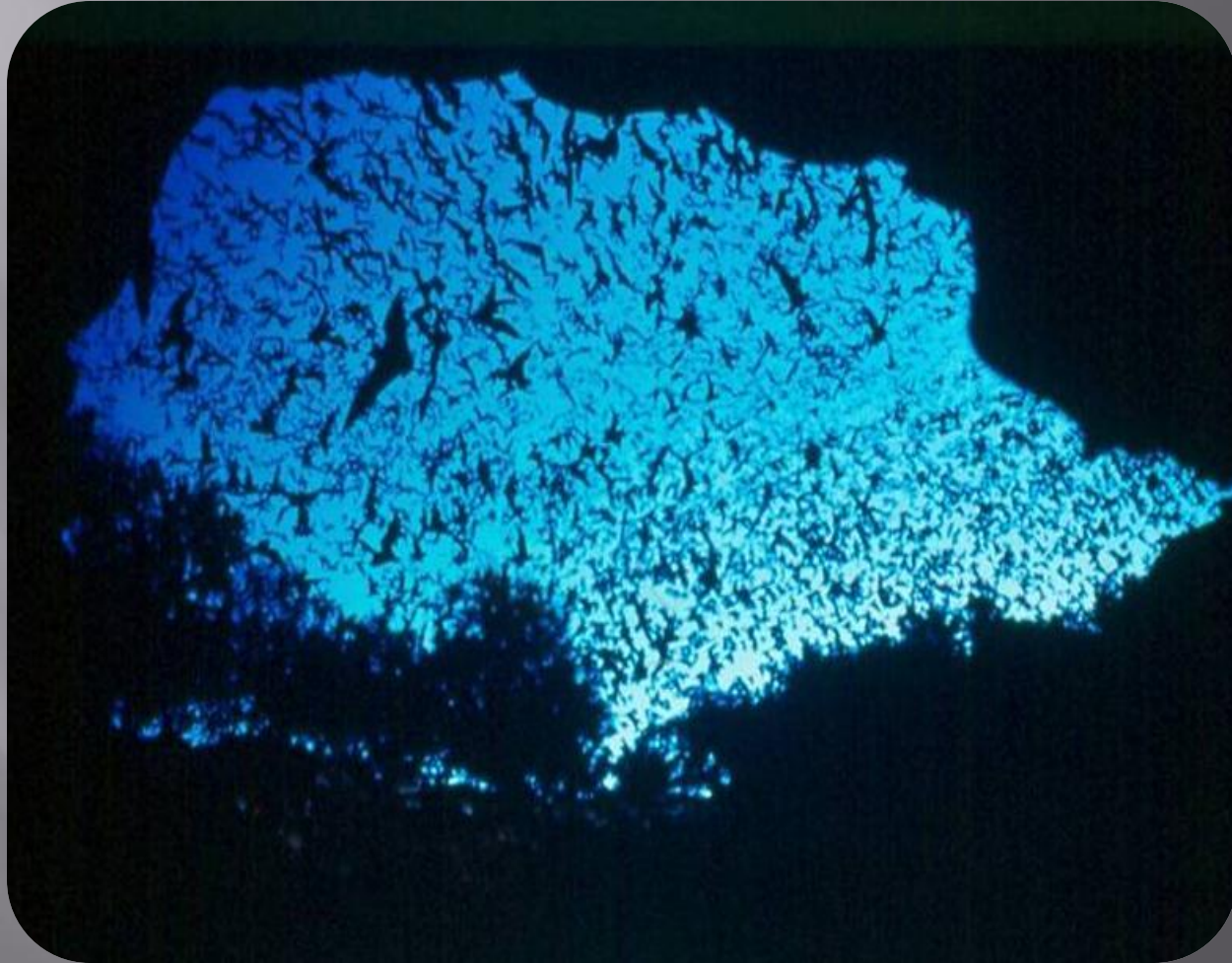
Dispersed Hibernation in Colorado, and little use of mines by WNS affected Species.



This Should Help us With Cave Related Issues.



Swarming and WNS



Questions?

