



Woodrat Monitoring in CUPN Parks

Importance / Issues

Allegheny woodrats (*Neotoma magister*) are considered a “species of concern” by the U.S. Fish and Wildlife Service, a G3/G4 species by the Natural Heritage Program, and occur on more state endangered and threatened species lists than does any other rodent species in the United States. Woodrats are important to the nutrient-poor cave ecosystem because they import organic material which supports a specialized cave invertebrate community.

Status and Trends

Cumberland Piedmont Network employees and volunteers are working to assess Allegheny woodrat population trends to:

- Determine current population structure and cave-use status and long-term trends in Allegheny woodrat population in “unmanaged” caves on the park.
- Establish current use-status and determine trends in use of “managed” caves by Allegheny woodrats on the park.
- Determine if trends in Allegheny woodrat population structure differ between “managed” and “unmanaged” caves within the park.

Management Applications

- Cave management and visitor activity may impact or inhibit woodrat access into and use of caves through imposition of physical barriers, such as cave doors, and various disturbance factors (noise, lighting, etc.).
- Woodrat use of “managed” caves on the park will be determined and trends in “managed”-cave use monitored over time in order to understand how management activities may affect woodrat cave use.
- Knowing the difference in woodrat population trends between “managed” and “natural” caves will enable ecologists to understand how management actions can impact woodrat population dynamics on the park.



Allegheny woodrat eating mushroom

Woodrat use of 9 “Managed” Caves

Cave Name	Nov. 2004 - April 2005	May 2005 - Oct. 2005	Nov. 2005 - April 2006	May 2006 - Oct. 2006	Nov. 2006 - April 2007	May 2007 - Oct. 2007	Nov. 2007 - April 2008	May 2008 - July 2008
Austin Entrance	1	0	0	0	0	0	0	0
Carmichael	0	0	0	0	0	0	0	0
Crystal	1	0	0	0	0	0	0	0
Frozen Niagara	2	1	1	1	1	0	0	2
Great Onyx	1	1	0	0	0	0	0	0
Historic Entrance	0	0	0	0	0	1	0	1
New Discovery	0	0	0	0	1	0	1	2
New Entrance	1	1	1	1	1	1	1	1
Violet City	1	0	0	2	1	0	1	1
Total # Caves with Woodrat	6 caves	3 caves	2 caves	3 caves	4 caves	2 caves	3 caves	5 caves

Relative Abundance and Population Estimate at 50 “Unmanaged” Caves

Sampling Date	Total # of Trap-nights	Total # of Captures	Total # of Individuals	Relative Abundance	Population Estimate
May 2005	192	15	10	5.2	11 ± 2.6
November 2005	200	12	8	4.0	8.8 ± 2.2
May 2006	200	6	4	2.0	4.3 ± 1.3
November 2006	200	16	10	5.0	10 ± 0.0
May 2007	200	16	10	5.0	10.4 ± 1.5
November 2007	200	8	6	3.0	7 ± 2.8
May 2008	200	5	3	1.5	3 ± 0.0
Totals	1,392	78	sum across sessions = 36	mean = 3.6 SD = 1.5	mean = 7.8 SD = 3.1