

## SUBTERRANEAN COMMUNITIES

### VII. SUBTERRANEAN SYSTEM

The subterranean system consists of both aquatic and non-aquatic habitats beneath the earth's surface, including air-filled cavities with openings to the surface (caves), water-filled cavities and aquifers, and interstitial habitats in small crevices. The Heritage Program has done ~~limited inventory work on caves; we do not~~ currently have in our files sufficient field data for evaluating the subterranean classification. For the characteristic species, I have relied upon comments from the staff of DEC's Endangered Species Unit, based upon their knowledge of bat hibernacula and caves in New York.

#### A. NATURAL CAVES

This subsystem includes caves and cavities in which the structure and hydrology have not been substantially modified by human activities, and the native biota are dominant.

**1. Aquatic cave community:** the aquatic community of a subterranean stream or pond. More data on this community are needed.

*Distribution:* throughout upstate New York, north of the Coastal Lowlands ecozone.

*Rank:* G4 S3S4

**2. Terrestrial cave community:** the terrestrial community of a cave, including the biota of both solution caves (in limestone) and tectonic caves. Temperatures are stable in deep caves. Small or shallow caves may have a temperature gradient ranging from cold (below freezing) to cool (up to 50° F). Although many caves have ice on the cave floor in winter, the ceiling is warm enough for a bat hibernaculum. Characteristic bats that hibernate in our caves include little brown bat (*Myotis lucifugus*), Keen's bat (*Myotis keenii*), big brown bat (*Eptesicus fuscus*), and Eastern pipistrelle (*Pipistrellus subflavus*).

*Distribution:* throughout upstate New York, north of the Coastal Lowlands ecozone.

*Rank:* G4 S3S4

**3. Talus cave community:** the community that occurs in small crevices and caves in a talus slope at the base of a cliff. This includes talus slopes that are cool enough to allow winter ice to

remain within the talus through all or part of the summer; these are known as ice caves. Characteristic animals include timber rattlesnake (*Crotalus horridus*) and small mammals.

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*Rank:* G4 S3S4

#### B. SUBTERRANEAN CULTURAL

This subsystem includes communities that are either created and maintained by human activities, or are modified by human influence to such a degree that the physical conformation of the substrate, or the biological composition of the resident community is substantially different from the character of the substrate or community as it existed prior to human influence.

**1. Mine/artificial cave community:** the biota of an abandoned mine or artificial underground excavation. Abandoned mines that are deep enough to maintain stable winter temperatures are important bat hibernacula. Characteristic bats include little brown bat (*Myotis lucifugus*), Keen's bat (*Myotis keenii*), big brown bat (*Eptesicus fuscus*), and Eastern pipistrelle (*Pipistrellus subflavus*).

*Distribution:* throughout upstate New York, north of the Coastal Lowlands ecozone.

*Rank:* G4 S3S4

**2. Sewer:** the biota of a subterranean conduit constructed to carry off sewage and sometimes runoff from an urban or developed area. A characteristic rodent is the Norway rat (*Rattus norvegicus*).

*Distribution:* throughout New York State.

*Rank:* G5 S5

**3. Tunnel:** the biota of a subterranean passageway constructed to allow transportation routes to pass through rock or earth obstructions or underground, including tunnels for roads, footpaths, highways, railroads, and subways.

*Distribution:* throughout New York State.

*Rank:* G5 S5

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**4. Basement/building foundation:** the biota of an underground structure that was built primarily as a support structure for a house, commercial building, or industrial building. This includes foundations of abandoned structures, as well as those that are actively used. Characteristic

animals include a wide variety of insects and small vertebrates.

*Distribution:* throughout New York State.

*Rank:* G5 S5