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Endangered Bat Populations in West Virginia Caves Gated or Fenced to Reduce Human Disturbance

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During the last 12 years, chain-link fences or round-bar or angle-iron gates were constructed at the entrances of 10 West Virginia caves to protect populations of federally endangered bats. These caves are hibernacula for *Myotis sodalis* (2 gated; 4 fenced) and/or *Corynorhinus townsendii virginianus* (4 fenced). Six caves harbor summer colonies of *C. t. virginianus* (3 gated; 3 fenced). All *M. sodalis* populations increased after the caves were protected; total number of *M. sodalis* increased from 1615 to 6297 bats (289.9%). Two caves have exceeded historic (pre-1965) levels; one cave, although exhibiting an increase, presently houses only 6% of the historic number. Populations of *C. t. virginianus* in 4 hibernacula increased following fencing, showing an overall increase from 3455 to 7491 individuals (116.8 %); one cave with "occasional winter use" contained 643 bats 4 years after a fence was constructed. These increases in the numbers of hibernating bats appear to be due to reduced human disturbance, however, other factors may have contributed to the increase at one cave. Summer colonies of *C. t. virginianus* increased from 2288 to 4381 individuals (91.5%). Both *M. sodalis* and *C. t. virginianus* seem to have adapted well to gates and fences, and populations remained stable or increased when the bats were not disturbed. Two case histories demonstrate the impacts of human disturbance: during the 3-year period following fencing. one maternity colony of *C. t. virginianus* increased from 739 to 1137 bats. The fence was then vandalized and the cave entered illegally; the colony numbered only 286 individuals the following summer. Four years later, the population had increased to only 39.9% of the pre-vandalism total. Another *C. t. virginianus* maternity colony in a gated cave increased 124.0% over the 8-year period following gating (from 225 to 560 adults). After illegal human entry into the cave in 1993, the population fell to 168 bats. the lowest count for this colony since 1983. Angle-iron gates, because they are probably the most difficult to breach, appear to offer the best protection where such gates are feasible.