

ATTACHMENT SS2

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: **Northern myotis**, also: Northern long-eared bat, eastern long-eared myotis, and northern bat.
Myotis septentrionalis

Criteria	Rank	Rationale	Literature Citations
<p>1 Distribution within R2</p>	<p>B</p>	<p>Within R2, distribution is believed limited to areas with suitable winter roosting habitat (caves, abandon mines, and selected rocky outcrops or human structures) in proximity to sufficient prey. It is known to occur in South Dakota (primarily in the Black Hills and Badlands) and the northeastern corner of Wyoming. It is not known to occur in Colorado.</p> <p>This species consumes a variety of night flying insects. This species was formerly considered an eastern subspecies of <i>Myotis keenii</i> (<i>M. keenii septentrionalis</i>). Ranking is based on citations listed. Confidence in Rank Medium</p>	<ul style="list-style-type: none"> • Harvey, et al., Bats of the U.S., 1999. • Higgins et al, Wild Mammals of South Dakota, 2000. • Bogan, M.A, et al. WBWG Conference: Ecology, Conservation and Management of Western Bat Species, 1998. • Barbour & Davis, Bats of America, 1969. • www.biology.eku.edu/bats/northernbat.html • www.tpwd.state.tx.us/nature/wild/mammals/bats/species/north_myotis.html • http://animaldiversity.ummz.umich.edu/accounts • www.batcon.org/discover/species/mysept.html • NaturServe: online encyclopedia. 2001 • South Dakota GAP Analysis
<p>2 Distribution outside R2</p>	<p>C</p>	<p><i>Myotis septentrionalis</i> ranges from British Columbia (where it's range may overlap with that of <i>Myotis keenii</i>) and Alberta, Canada, eastward to the Atlantic Ocean and southward to Arkansas and Florida. In the US, it is primarily an eastern species but does occur in ND,SD,eastern Wy, eastern NB, KS, and eastern OK. Considered common over much of it's range, little is known about population trends. It is likely that distribution remains patchy and dependant on suitable, available roosting habitat. There is no special status for the bat.</p> <p>Confidence in Rank High</p>	<ul style="list-style-type: none"> • Refer to literature citations listed under Criteria #1

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<p>3 Dispersal Capability</p>	B	<p>There would appear to be imitations on the species ability to disperse since suitable habitat likely occurs in Colorado and is not occupied. Suspected dependence and fidelity on winter roost sites (caves, rock crevices or abandon mines, these are also used as summer night roosts). Little information exists on juvenile dispersal. No long-distance migrations have been reported, however short distance migrations are suspected. Ranking confidence is medium because there are gaps in knowledge regarding dispersal ability of this species.</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> • Barbour & Davis, Bats of America, 1969 • Higgins et al., Wild Mammals of SD, 2000 • Bogan, M.A. et al. WBWG Conference : Ecology, Conservation and Management of Western Bat Species, 1998
<p>4 Abundance in R2</p>	C	<p>This species is currently considered common over much of its range, and believed abundant based on (summer) surveys conducted in the Black Hills, which appears to make up the bulk of the R2 occurrences. The species was only recently confirmed to be a year-round resident in the Black Hills (SD), there are no reports of hibernation sites in the Wyoming portion. In the Black Hills, it has been found hibernating in a handful of caves or abandoned mines where they are found singling or in small clusters. This species seems to prefer sites with a high relative humidity, which would reduce the number of potential roosting sites. Hibernacula population surveys are complicated by the fact that this species often wedge back into rock crevices hidden from view. More information is needed regarding maternity roost requirements as well. While ranked as 'common' at this time, data is lacking to make this a confident determination. For reference info: This species is considered critically imperiled (S1) in Montana; Imperiled (S2) in Kansas and Oklahoma; and Vulnerable (S3) in South Dakota. Global rank is G4.</p> <p>Confidence in Rank Low</p>	<ul style="list-style-type: none"> • Tigner, J. 1997. Bats of the Black Hills (internal-working paper-draft) • Higgins et al., Wild Mammals of South Dakota, 2000 • Bogan, M.A., et al. WBWG Conference: Ecology, Conservation and Management of Western Bat Species, 1998. • NatureServe: online encyclopedia. 2001 • South Dakota GAP Analysis

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5 Population Trend in R2	D	<p>Closures of abandoned mines and increased human activity at caves that are roost sites will adversely affect populations. This is true in the Black Hills region. Human activity into roosting habitat is suspected to be increasing and this will likely contribute to a decline in population, at a local scale for the present. This bat uses large diameter snags as maternity roost sites that can be lost during timber harvesting, prescribed burning (and wildfire), and to firewood gathering (legal and illegal). Human structures used as roost sites can be altered without warning and are all located off National Forest land. Data regarding population structure or trend for this species is lacking. This species seems to be more solitary than other species of <i>Myotis</i> making population trend information difficult to obtain. The potential longevity for this species is up to 20 years. This species is listed a S1 (there is a low level of confidence in this ranking at this time).</p> <p>Confidence in Rank Low</p>	<ul style="list-style-type: none"> • Bogan, M.A., et al. WBWG Conference: Ecology, Conservation and Management of Western Bat Species, 1998 • Tigner, J. 1997. Bats of the Black Hills (internal-working paper-draft) • NatureServe: online encyclopedia. 2001 • South Dakota GAP Analysis
6 Habitat Trend in R2	A	<p>There is a documented adverse trend in roosting habitat availability, both hibernacula and maternity sites. With increases in recreational/scientific caving, closures of abandoned mines for safety reasons (and natural mine structural collapse) suitable roosting habitat for this species is both vulnerable to disturbance, and declining in quantity and quality. Loss of large diameter snags contributes to declines in maternity roost availability. To what extent this species is dependant on these specific habitat features is unclear, since this species is known to utilize human structures as roost sites, however these too can be lost to development. More information is needed on roosting and foraging requirements. The Black Hills NF has mitigation actions that can be used to reduce the loss of potential roosting habitat.</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> • Bogan, M.A., et al. WBWG Conference: Ecology, Conservation and Management of Western Bat Species, 1998 • Harvey, et al., Bats of the U.S., 1999. • Bats and Forests Symposium, Victoria, B.C. 1995

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<p>7 Habitat Vulnerability or Modification</p>	<p>A</p>	<p>As was mentioned in "Habitat Trend." Cave/abandoned mine roost sites are vulnerable, and the loss of large diameter snags occurs during forest management actions.</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> • Bogan, M.A., et al. WBWG Conference: Ecology, Conservation and Management of Western Bat Species, 1998. • Harvey, et al., Bats of the U.S., 1999. • Bats and Forests Symposium, Victoria, B.C. 1995. • Tigner, J. 1997. Bats of the Black Hills (internal-working paper-draft)
<p>8 Life History and Demographics</p>	<p>B+</p>	<p>Excluding the potential for harm done (by humans) to a large number of bats in a single roost, this species also has a low reproductive potential (generally 1 pup/year to a breeding female). Adult survival is suspected to be up around 80%, and adults are known to be living after 20 years, but this is likely to be much less with one study finding the average age being approx. 5 years. Susceptibility to disease, predation, or competition is not well documented. Roost fidelity is high which has the potential to increase susceptibility to disease, predation and other harms. Some roosts are likely lost for many years once the population using that roost has been eliminated or displaced. Confidence of this ranking is moderate with much additional study needed in this area.</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> • Pierson, et al., 1999 • Kunz and Marten, 1982
<p>Initial Evaluator(s): Brad Phillips</p>			<p>Date: 10/29/2001</p>