

ATTACHMENT SS2

Revised RH 6/19/01

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: <i>Vulpes velox</i> / Swift Fox			
Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	C	<p>The swift fox inhabits the shortgrass and midgrass prairie ecosystem of the Great Plains and seems to prefer heavily grazed, early successional stages of grassland communities. Studies in Kansas and Colorado demonstrate that the swift fox has been able to adapt to a mixed prairie-agricultural landscape. Adaptability to various habitat types was further demonstrated in Wyoming where the swift fox was found to occupy sagebrush-grassland and sagebrush-greasewood habitat types with topography ranging from flat to badland-like terrain (USFWS 1995, USFWS 2000, Kahn et. al. 1997)</p> <p>The potential habitat for Swift Fox in Region 2 is limited to the National Grasslands and the Bessey Ranger District of the Nebraska National Forest.</p> <p>The National Grasslands of South Dakota and Nebraska and the Bessey Ranger District of the Nebraska National Forest fall within the historical range of the swift fox. Large proportions of all of these areas are potential swift fox habitat. Yet, they have only one isolated population, which is on the Buffalo Gap National Grassland. There have been incidental sighting of foxes on the Oglala National Grassland but no indication of a stable population has been found. In recent years, no foxes have been seen on the Fort Pierre National Grassland of South Dakota, nor on the Bessey Ranger District, which is located in the sand hills of central Nebraska. (Allen et al. 1995, Giddings 1997, Luce and Lindzey 1996, Roy 1998, Schmitt 2000).</p> <p>On the National Grasslands of Wyoming (Thunder Basin), Colorado (Pawnee and Comanche), and Kansas (Cimarron), surveys indicate stable populations of swift fox. (Allen et al. 1995, Giddings 1997, Luce and Lindzey 1996, Roy 1998, Schmitt 2000).</p> <p>A ranking of C (Contiguous) is given because of the continuous occupation of the grasslands of Wyoming, Colorado, and Kansas by swift fox. These grasslands are more on the shortgrass side of the spectrum, which is preferred habitat for the swift fox.</p> <p>The grasslands in South Dakota and Nebraska have only scattered populations of swift fox. These grasslands are more midgrass variety in mid to late sucesional stages, which may help to explain the absence of swift fox.</p> <p>Confidence in Rank <b>High</b></p>	<p>Allen, S.H., J.W. Hoagland, and E. D. Stukel. 1995. 1995 Swift Fox Conservation Team Annual Report.</p> <p>Giddings, B. 1997. 1997 Swift Fox Conservation Team Annual Report.</p> <p>Kahn, R., L. Fox, P. Horner, B. Giddings, and C. Roy. 1997. Conservation assessment and conservation strategy for swift fox in the United States. 54 pp.</p> <p>Luce, B., and F.G. Lindzey. 1996. 1996 Swift Fox Conservation Team Annual Report.</p> <p>Roy, C. 1998. 1998 Swift Fox Conservation Team Annual Report.</p> <p>Schmitt, G. 2000. 1999 Swift Fox Conservation Team Annual Report.</p> <p>U. S. Fish and Wildlife Service. 1995. Twelve Month Administrative Finding on Petition to List the Swift Fox.</p> <p>U. S. Fish and Wildlife Service. 2000. Candidate and Listing Priority Form for the Swift Fox.</p>

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2 Distribution outside R2	C	<p>The historic range of the swift fox includes all or portions of Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming, and the southern prairie region of Alberta, Manitoba, and Saskatchewan. Some historical range descriptions include swift fox in Minnesota and Iowa; however, there are no verifiable records of swift fox occurrence in either State (Sovada and Scheick 2000, USFWS 2000).</p> <p>Currently, the species occurs in 9 of the 10 states within the historic range and in approximately 40 percent of its historic range. Evaluations have demonstrated nearly continuous distribution of swift fox populations from Wyoming south throughout eastern Colorado, western Kansas, the Oklahoma Panhandle, eastern New Mexico, and in two or three counties in the extreme northern panhandle of Texas. Scattered populations can also be found in Montana, South Dakota, and Nebraska. In Canada, there are populations of swift fox in southern Alberta and Saskatchewan.</p> <p>Confidence in Rank High</p>	<p>Sovada, M. A., and B. K. Scheick. 2000. 1999 Annual Report, Preliminary report to the Swift Fox Conservation Team: Historic and Recent Distributions of Swift Foxes in North America. <u>In</u> 1999 Swift Fox Conservation Team Annual Report. Pages 80-118.</p> <p>U. S. Fish and Wildlife Service. 2000. Candidate and Listing Priority Form for the Swift Fox.</p>
3 Dispersal Capability	C	<p>The swift fox is a mobile species, and there are no physical barriers on the Great Plains to hamper its dispersal.</p> <p>Predation and interspecific competition with coyotes and expanding red fox populations may be the two most serious limiting factors to swift fox recolonization of potential habitat within the historic range. Competition with coyote and red fox confer a likely ecological barrier for settling into new areas. Coyote killing of swift foxes appears to have significantly affected the experimental reintroduction of swift foxes in Canada (Sovada 1995).</p> <p>Confidence in Rank High</p>	<p>Sovada, M. A. 1995. NBS 1995 Report for the Swift Fox Conservation Team: <u>In</u> 1995 Swift Fox Conservation Team Annual Report. Pages 133-138.</p>

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<p>4 Abundance in R2</p>	<p>B</p>	<p><b>COLORADO</b>  <b>Pawnee National Grassland</b>                  Formal surveys were conducted in 1990,1991,1993,1994,1996-1999. Swift fox were located each year.  <b>Comanche National Grassland</b>                  Formal surveys were conducted in 1995 and 1996. Fox were located both years of the formal surveys and there have been numerous swift fox sightings.  <b>KANSAS</b>  <b>Cimmarron National Grassland</b>                  Formal surveys were completed in 1998 and swift fox were located and there have been incidental sightings over the years  <b>NEBRASKA</b>  <b>Oglala National Grassland</b>                  Formal surveys were conducted in 1994 &amp; 1996. No swift fox were found. There are incidental sightings of swift fox on the Oglala National Grassland but there is no indication that a stable fox population exists in the area.  <b>Bessey Ranger District.</b>                  No formal surveys have been completed. There have not been any recent sighting of swift fox in the area and there is no reason to believe swift fox exist in the area.  <b>SOUTH DAKOTA</b>  <b>Buffalo Gap National Grassland</b>  <b>Wall Ranger District</b>                  There have been incidental sightings in the Conata Basin black-footed ferret reintroduction area. These sighting occurred while doing black-footed ferret spotlight surveys. No formal swift fox surveys have been completed on the district.  <b>Fall River Ranger District.</b>                  Formal swift fox surveys have been completed on the district starting in 1989. Swift fox have been located in various places on the district but foxes have been found every year only in the Ardmore SD area.  <b>Fort Pierre National Grassland</b>                  No formal surveys have been completed. There have not been any recent sighting of swift fox in the area and there is no reason to believe swift fox exist in the area.  <b>WYOMING</b>  <b>Thunder Basin National Grassland</b>                  Formal surveys were conducted in 1998 and swift fox tracks were located on all transects. (USDA 1995), (USDA 1996), (USDA 1997), (USDA 1998), (USDA 2000).                  Confidence in Rank Medium</p>	<p>USDA Forest Service 1995. 1995 Swift Fox Field Surveys. <u>In</u> 1995 Swift Fox Conservation Team Annual Report. Pages 139-168.</p> <p>USDA Forest Service 1996. 1996 Swift Fox Field Surveys. <u>In</u> 1996 Swift Fox Conservation Team Annual Report. Pages 76-94.</p> <p>USDA Forest Service 1997. 1997 Swift Fox Field Surveys. <u>In</u> 1997 Swift Fox Conservation Team Annual Report. Pages 110-112.</p> <p>USDA Forest Service 1998. 1998 Swift Fox Field Surveys. <u>In</u> 1998 Swift Fox Conservation Team Annual Report. Pages 66-84.</p> <p>USDA Forest Service 2000. 1999 Swift Fox Field Surveys. <u>In</u> 1999 Swift Fox Conservation Team Annual Report. Pages 73-79.</p>
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<p>5 Population Trend in R2</p>	<p>B</p>	<p>On Forest service lands in South Dakota and Nebraska, there is one known isolated population of swift fox located on the Buffalo Gap National Grassland. The extent of this population on the private lands adjacent to the National Grassland is uncertain and it is difficult to assess a trend with the present data. Sightings of swift fox have occurred on the Oglala National Grassland and other locations on the Buffalo Gap but further monitoring has failed to find a stable population of swift fox and these sightings have been classified as incidental (USDA 1995), (USDA 1996), (USDA 1997), (USDA 1998), (USDA 2000).</p> <p>On the National Grasslands of Wyoming (Thunder Basin), Colorado (Pawnee and Comanche), and Kansas (Cimarron), surveys indicate stable populations of swift fox (USDA 1995), (USDA 1996), (USDA 1997), (USDA 1998), (USDA 2000). Kahn and Fitzgerald (1996) indicate a possible increase in swift fox numbers on the Pawnee National Grassland</p> <p>A ranking of B (stable population) is given because of the stable populations of swift fox on the grasslands of Wyoming, Colorado, and Kansas. These grasslands are more on the shortgrass side of the spectrum, which is preferred habitat for the swift fox.</p> <p>The grasslands in South Dakota and Nebraska have only scattered populations of swift fox. These grasslands are more midgrass variety in mid to late successional stages, which may help to explain the absence of swift fox.</p> <p>Confidence in Rank Medium</p>	<p>Kahn, R., T. Beck, J. Fitzgerald, D. Finley, and B. Roell. 1996 Swift fox investigations in Colorado, 1996. <u>In</u> 1996 Swift Fox Conservation Team Annual Report. Pages 10-15.</p> <p>USDA Forest Service 1995. 1995 Swift Fox Field Surveys. <u>In</u> 1995 Swift Fox Conservation Team Annual Report. Pages 139-168.</p> <p>USDA Forest Service 1996. 1996 Swift Fox Field Surveys. <u>In</u> 1996 Swift Fox Conservation Team Annual Report. Pages 76-94.</p> <p>USDA Forest Service 1997. 1997 Swift Fox Field Surveys. <u>In</u> 1997 Swift Fox Conservation Team Annual Report. Pages 110-112.</p> <p>USDA Forest Service 1998. 1998 Swift Fox Field Surveys. <u>In</u> 1998 Swift Fox Conservation Team Annual Report. Pages 66-84.</p> <p>USDA Forest Service 2000. 1999 Swift Fox Field Surveys. <u>In</u> 1999 Swift Fox Conservation Team Annual Report. Pages 73-79.</p>
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<p>6 Habitat Trend in R2</p>	<p>B</p>	<p>The swift fox habitat in Region 2 is the grassland habitat and is restricted to the National Grasslands and the Bessey Ranger District of the Nebraska National Forest.</p> <p>Recent studies indicate that the swift fox is flexible in its habitat requirements and can utilize areas with mixed land uses. Finding areas where they can obtain prey and avoid predation seems to be key to their survival (Allen et al. 1995, Giddings 1997, Luce and Lindzey 1996, Roy 1998, Schmitt 2000). The swift fox inhabits the shortgrass and midgrass prairie ecosystem of the Great Plains. It is doubtful that the management of the swift fox areas in Region 2 will change enough to affect the swift fox habitat.</p> <p>Studies conducted by Uresk &amp; Sharps (1986) in the northern portion of the swift fox range in South Dakota document an association between swift fox and prairie dogs. The recent petition to list prairie dogs and finding by the Fish and Wildlife Service of warranted but precluded has halted prairie dog control on the public lands. This may provide higher quality swift fox habitat in the Region.</p> <p>Confidence in Rank High</p>	<p>Allen, S.H., J.W. Hoagland, and E. D. Stukel. 1995. 1995 Swift Fox Conservation Team Annual Report. Giddings, B. 1997. 1997 Swift Fox Conservation Team Annual Report. Luce, B., and F.G. Lindzey. 1996. 1996 Swift Fox Conservation Team Annual Report.</p> <p>Roy, C. 1998. 1998 Swift Fox Conservation Team Annual Report. Schmitt, G. 2000. 1999 Swift Fox Conservation Team Annual Report.</p> <p>Uresk, D.W., and J.C. Sharps. 1986. Denning habitat and diet of swift fox in western South Dakota. Great Basin Naturalist 46:249-253</p>
<p>7 Habitat Vulnerability or Modification</p>	<p>C</p>	<p>As long as the National Grasslands remain in federal ownership, there is little chance of the land being converted to cropland or being developed. Swift fox are compatible with livestock grazing and seems to prefer heavily grazed, early successional stages of grassland communities (USFWS 1995).</p> <p>A problem could occur if the adjacent private lands would be altered enough to affect the swift fox habitat within the Forest Service lands. There is a concern that most of the remaining grassland in the western Great Plains exists in a mixed cropland/grassland mosaic which does not favor swift fox. The checkerboarded landscape of grassland and cropland could fragment habitat into islands, reducing available territories and prey while increasing predation and competition. Also expressed was a theory that grasslands that have not been converted to cropland may be rendered unsuitable as swift fox habitat due to the fragmentation caused by the pattern of cropland conversion (USFWS 1995). But, recent studies indicate that the swift fox is flexible in its habitat requirements and can utilize areas with mixed land uses (Allen et al. 1995, Giddings 1997, Luce and Lindzey 1996, Roy 1998, Schmitt 2000).</p> <p>Confidence in Rank High</p>	<p>Allen, S.H., J.W. Hoagland, and E. D. Stukel. 1995. 1995 Swift Fox Conservation Team Annual Report. Giddings, B. 1997. 1997 Swift Fox Conservation Team Annual Report. Luce, B., and F.G. Lindzey. 1996. 1996 Swift Fox Conservation Team Annual Report.</p> <p>Roy, C. 1998. 1998 Swift Fox Conservation Team Annual Report. Schmitt, G. 2000. 1999 Swift Fox Conservation Team Annual Report.</p> <p>U. S. Fish and Wildlife Service. 1995. Twelve Month Administrative Finding on Petition to List the Swift Fox.</p>

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<p align="center">8 Life History and Demographics</p>	<p align="center">B</p>	<p>Swift fox tend to be monogamous and often pair for life. They breed in late December or early January in the southern portion of the range to early March in the northern portion of the range. Gestation is estimated to be 52-53 days. Average litter sizes of 3 - 6 pups (USFWS 2000).</p> <p>There is no indication that parasites or diseases are significant factors to the population dynamics of wild foxes. Nematode parasites tend to dominate the parasite fauna of swift fox. Hookworms, whipworms, protozoan, and ectoparasite species also have been found (USFWS 1995). Various diseases have been documented serologically (bubonic plague, canine distemper); however, there are few cases of confirmed overt disease in wild swift fox (USFWS 2000).</p> <p>Predation and interspecific competition with coyotes and expanding red fox populations may be the two most serious limiting factors to swift fox recolonization of potential habitat within the historic range. Competition with coyote and red fox confer a likely ecological barrier for settling into new areas. Coyote killing of swift foxes appears to have significantly affected the experimental reintroduction of swift foxes in Canada (Sovada 1995).</p> <p>Confidence in Rank High or Medium or Low</p>	<p>Sovada, M. A. 1995. NBS 1995 Report for the Swift Fox Conservation Team: <u>In</u> 1995 Swift Fox Conservation Team Annual Report. Pages 133-138</p> <p>U. S. Fish and Wildlife Service. 1995. Twelve Month Administrative Finding on Petition to List the Swift Fox.</p> <p>U. S. Fish and Wildlife Service. 2000. Candidate and Listing Priority Form for the Swift Fox.</p>
<p>Evaluator(s): Robert A. Hodorff</p>			<p>Date: June 19, 2001</p>

**National Forests in the Rocky Mountain Region where species is KNOWN (K) or LIKELY (L)<sup>1</sup> to occur:**

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<sup>1</sup> Likely is defined as more likely to occur than not occur on the National Forest or Grassland. This generally can be thought of as having a 50% chance or greater of appearing on NFS lands.

