Proposed

Description of residence for Swift Fox (*Vulpes velox*) in Canada

Section 33 of the *Species at Risk Act* (SARA) prohibits damaging or destroying the residence of a listed threatened, endangered, or extirpated species. SARA defines residence as: “*a dwelling-place, such as a den, nest or other similar area or place, that is occupied or habitually occupied by one or more individuals during all or part of their life cycles, including breeding, rearing, staging, wintering, feeding or hibernating*” [s.2(1)].

The prohibition comes into effect in different ways depending on the jurisdiction responsible for the species. Because the Swift Fox is not under pre-existing federal jurisdiction, the residence prohibition is only automatically in effect on federal lands on which the species occurs. SARA also contains a provision to prohibit the destruction of non-federal species’ residences on provincial, territorial, and private lands by way of an Order by the Governor in Council (GIC), if the Minister of the Environment recommends it necessary to do so [s.34(2), 35(2)]. Unless such an Order is made, responsibility for this species remains with Provinces and Territories.

The following is a description of residence for the Swift Fox (*Vulpes velox*), created for the purposes of increasing public awareness and aiding enforcement of the above prohibition. Swift Foxes are known to have two types of residences - natal dens and shelter dens.

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**Assessment Summary – November 2009**

**Common name**  
Swift fox

**Scientific name**  
*Vulpes velox*

**Status**  
Threatened

**Reason for designation**  
This species was extirpated from Canada in the 1930s. Following reintroduction programs in Alberta and Saskatchewan initiated in 1983, they have re-established populations in these areas and in northern Montana. Population numbers and distribution have increased since that time, with the current estimate in Canada having doubled to 647 since the last COSEWIC assessment in 2000. Connectivity between populations has also improved during this time, particularly through northern Montana. Since 2001, population numbers and distribution have remained stable and habitat for this species within Canada appears to be saturated. Most improvement in overall population status can be attributed to populations in Montana, which are still demonstrating increasing trends in numbers and distribution. Deteriorating habitat in Canada and the threat of disease (as seen in other canids) could threaten the continued recovery of this species.

**Occurrence**  
Alberta, Saskatchewan

**Status history**  
Proposed

1) Natal Den: Any tunnel and connected chambers used by a Swift Fox to give birth and rear kits is considered a residence.

Physical Appearance and Context
Swift Foxes are primarily prairie specialists and occur in short and mixed grass prairie in southern Alberta and Saskatchewan\(^1\). Swift Foxes often modify prairie burrows such as, but not limited to, badger (\textit{Taxidea taxus}), black-tailed prairie dog, and Richardson’s ground squirrel holes and use them as natal den sites\(^2,3\). In the spring and summer (circa April – August), den complexes typically having one or more central chambers connected to the surface by tunnels\(^4,5\) are used to rear young. Pairs in Canada have been documented to use up to eight different multiple entrance den sites during the kit birthing/rearing period\(^6,10\). The use of 13 different dens has been reported throughout one year\(^6\). The maximum number of dens used on the Canadian prairie may be greater if Swift Foxes are similar to Kit Foxes where the use of up to 50 dens per fox has been documented\(^10\).

Adult Swift Foxes are thought to choose dens based on their location and physical characteristics, particularly for the selection of natal den sites that usually have more entrances compared to temporary escape or shelter dens\(^3,6,7,8\). Additionally, at Swift Fox natal den entrances there are typically distinctive long, narrow dirt trailings compared to the mound of dirt at badger diggings.
Proposed

On the Canadian prairie, the location and physical characteristics of Swift Fox natal den sites were compared to prairie burrows (typically badger)\. The model identified five variables (position on hill, distance from water, distance from roads/trails, new grass height, and slope of hills) that discriminated occupied dens from unoccupied sites with an overall classification success of 83\%. Essentially, occupied natal dens (compared to unoccupied sites) used for rearing kits were not located randomly but were found on hilltops with gradual slopes, with relatively higher grass, further from water, and closer to roads and/or trails\).

Function
Natal dens provide a safe place for giving birth and rearing kits.

Damage and Destruction of Residence
Any alteration that destroys the function of single or multiple entrance natal dens would constitute damage or destruction of the residence. This would include, but is not limited to, habitat change near the den, including ploughing or disturbing native short or mixed grassland communities, particularly when such changes lead to the blocking or abandonment of a den.

In a report created for Environment Canada, setback distances were recommended for petroleum industry activities that affect species at risk\. In Saskatchewan, these recommended distances are 500m from a Swift Fox den for most activities during the February 15 to August 31, except for high-level disturbances (eg. permanent structures, roads) for which a setback distance of 2000m from a den is recommended. From September 1 until February 14 the recommended setback distances are 100m, 500m, and 2000m for low, medium, and high-level disturbances, respectively\. These setback distances were adopted by Saskatchewan Environment and Resource Management to be used as activity restriction guidelines for sensitive species in natural habitats\. Setback distances for Alberta in the Environment Canada report reflect the provincial guidelines.

Alberta Fish and Wildlife Division recommend setback distances from Swift Fox dens of 500m for all activities between February 15th and July 31st (breeding season)\. These setback distances change between August 1st and February 14th, to 50m for low-level disturbances such as surveying and monitoring, 100m for short-term vegetation disturbance (eg. low footprint seismic activities), and 500m for the creation of human structures, disturbance of soils or long-term vegetation disturbance (e.g., wellsites, powerlines, pipelines, batteries, roads)\).

Period and Frequency of Occupancy
Swift foxes are among the most den dependent of all canids and use natal and shelter dens throughout the year. Repeated use of dens by canids has been described for many North American canid species including the closely related kit foxes\, although each den is not necessarily used every year\. This repeated use of natal and shelter dens has also been observed for wild Swift Foxes in Canada\. 
Proposed

Dens used by parents and young between April 1 and August 31 are natal dens and should be considered as such for 5 years since the last known occupancy. Burrows > 11 cm with a clear tunnel within 800 m of occupied natal rearing dens should be protected from April 1 to August 31.

2) Shelter Den: Any tunnel and connected chambers used by a Swift Fox for shelter from weather or escape from predators is considered a residence.

Physical Appearance and Context
Swift foxes often modify prairie burrows such as badger holes for use as shelter dens throughout the year. However, they may use unmodified badger or similar sized holes as shelter dens as well. Entrance holes for shelter dens may be smaller (≥ 11 cm diameter with a clear tunnel) than entrance holes for natal dens and typically shelter dens have fewer entrances than natal dens. Opportunistic use of appropriate sized holes may occur during predator avoidance.

Function
Shelter dens serve as shelter from weather extremes and as escape refugia from predators. They are particularly important as refugia from predators during spring and fall dispersal and from weather extremes during the winter.

Damage and Destruction of Residence
Any alteration that destroys the function of shelter dens would constitute damage or destruction of the residence. This would include, but is not limited to, habitat change near the den, including ploughing or disturbing native short or mixed grassland communities, particularly when such changes lead to the blocking or abandonment of a den.

Period and Frequency of Occupancy
Any shelter den should be protected for 5 months from the time of last known occupancy. Occupancy can be determined from fox sightings, tracks, scats, prey remains, fresh digging or hair around the entrance.

Additional Information
For more information on the Swift Fox, go to:
http://www.sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=140
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For more information on SARA, go to:
http://www.sararegistry.gc.ca/default_e.cfm

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References


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11 Alberta Fish & Wildlife Division. 2001. Recommended Land Use Guidelines for Protection of Selected Wildlife Species and Habitat Within Grassland And Parkland Natural Regions of Alberta.

