APPENDIX H

Potential and Confirmed Fish, Mammal and Herptile Species on Burnaby Mountain

Common Name	*Scientific Name*	Habitat Notes	Breeding Habitat	Provincial List 1997	Expected Potential for Occurrence[1]	Source	Obs-erved ?
Amphibians							
Roughskin newt	*Taricha granulosa*	forested, partially wooded and developed	ponds lakes or backwater streams	Yellow	3	z	
Northwestern salamander	*Abystoma gracile*	moist forests or partially wooded areas	breed in permanent ponds or stream backwaters	Yellow	5	c	c
Long-toed salamander	*Abystoma macrodactylum*	various; grasslands, forests and disturbed areas	seasonal pools, lake edges or slow streams	Yellow	3		
Pacific giant salamander	*Dicamptodon tenebrosus*	small to med. streams and adjacent moist forests	silt-free streams with logs and cobble	Red	3	e	
Clouded salamander	*Aneides ferreus*	Doug.fir forests; incl burned, sec. growth and rocky areas	eggs laid in rotting logs or rock crevices	Yellow	3	y,z,e	
Ensatina salamander	*Ensatina eschscholtzi*	fully terrestrial; old growth forests to disturbed areas	eggs laid in burrows or under rotting debris	Yellow	5	c	c
Western red-backed salamander	*Plethodon vehiculum*	forested areas, talus, poss. stream edges	hollows underground or between damp rocks	Yellow	5	c	c
Western toad	*Bufo boreas*	fields, forests or meadows with damp cond's	shallow water including temporary pools	Yellow	5	c	c
Pacific treefrog	*Hyla regilla*	marshes, wet meadows, riparian areas or woodlands	eggs laid on bottom of warm shallow pools	Yellow	5	c	c, g
Red-legged frog	*Rana aurora*	moist coniferous / deciduous forests or forested wetlands	breed in shaded cool ponds, to 2m deep	Yellow	3	y,z,e	
Spotted frog, Lower Mainland pop.	*Rana pretiosa*	stagnant water with abundant aquatic vegetation	same; eggs attached to bottom vegetation	Red	3	y,z,e	
Reptiles							
Western Garter Snake	*Thamnophis*	meadows and estuaries; freshwater and		Yellow	4	x	
Northwestern Garter Snake	*Thamnophis*	meadow areas especially forest edges		Yellow	4	x	
Common Garter Snake	*Thamnophis sirtalis*	widely variable; marshes, small lakes, ponds and humid forests	dependent upon availability of desired prey species; amphibians and earthworms	Yellow	5	x, c	c

Common Name	*Scientific Name*	Habitat Notes	Breeding Habitat	Provincial List 1997	Expected Potential for Occurrence[1]	Source	Observed ?
Mammals							
Pacific water shrew	*Sorex bendirii*	dense moist conifer forests and associated riparian habitats, on beaches, and in marshes		Red	2	v, w, e	
Masked shrew	*Sorex cinereus*	various elevations; dense forests with signif. ground cover and moisture, sometimes found in moist fields and burns		Yellow	3	v, w, e	
Dusky shrew	*Sorex monticolus*	rare in open areas and prefers closed forests at low elevations; exists from sea level to alpine and boreal areas.		Yellow	4	v	
Water shrew	*Sorex palustrus*	stream banks, lakeshores and marshes; poss. nearby wet meadows, but seems to prefer fast moving water		Yellow	2	v, w	
Trowbridge's shrew	*Sorex trobridgii*	dry conifer and deciduous forests with rich soil and natural forest floor litter and debris; poss. in moister areas		Blue	2	v, w	
Vagrant shrew	*Sorex vagrans*	moist coniferous forests, rich, low acid soils, horse tail stands along streams and grassy		Yellow	3	v, w	
Shrew-mole	*Neurotrichus gibbsii*	loose, rich soils, underbrush and other coarse woody debris preferred, ravines and river banks and other riparian areas		Yellow	3	v, w	
Coast mole	*Scapanus orarius*	moist well drained soils agricultural lands, riparian areas and forest species; seems to avoid acidic soils		Yellow	5	v, w, f	f
Townsend's Mole	*Scapanus townsendii*	good humus areas, in lowland meadows, cultivated fields and flood plains		Red	5	v, w, a	a
California myotis	*Myotis californicus*	uses trees (i.e., cavities or loose bark), rock crevices and buildings/ bridges for roosts; water or other edge for foraging	maternity colonies same as day roosts	Yellow	5	u	g[3]
Western Long-eared Myotis[2]	*Myotis evotis*	same as California myotis	maternity colonies usually in buildings and tree roosts	Yellow	5	u	g[3]
Keen's Long-eared Myotis[2]	*Myotis keenii*	likely similar natural history to previous but strictly coastal	unknown	Red	5	u	g[3]

Common Name	*Scientific Name*	Habitat Notes	Breeding Habitat	Provincial List 1997	Expected Potential for Occurrence[1]	Source	Observed ?
Little Brown Myotis[2]	*Myotis lucifugus*	uses trees (i.e., cavities or loose bark), rock crevices and buildings/ bridges for roosts; water or other edge habitat for foraging	maternity colonies use same day roost habitat providing they are large (to accommodate many bats) and warm	Yellow	5	u	g[3]
Long-legged Myotis[2]	*Myotis volans*	uses trees (i.e., cavities or loose bark), rock crevices and buildings/ bridges for roosts; water or other edge habitat for foraging	maternity colonies only found in buildings in British Columbia	Yellow	5	u	g[3]
Yuma Myotis[2]	*Myotis yumanensis*	same as above	large maternity colonies in buildings; smaller ones found in other day roost types	Yellow	5	u	g[3]
Hoary Bat[2]	*Lasiurus cinereus*	uses trees (i.e., branches or cavities), rarely uses rock crevices and buildings/ bridges for roosts; open areas and edge habitat required	unknown	Yellow	5	u	g
Silver-haired Bat[2]	*Lasionycteris noctivagans*	uses trees (i.e., branches or cavities), buildings and caves or mines for roosting; open areas and edges required for tree-top level foraging potential; hibernates in tree	unknown	Yellow	5	u	
Big Brown Bat[2]	*Eptesicus fuscus*	uses trees (i.e., cavities or loose bark), rock crevices and buildings/ bridges for roosts and hibernation; water or other edge habitat for foraging	large maternity colonies usually in trees with smaller colonies in buildings	Yellow	5	u	
Townsend's Big-eared Bat[2]	*Pleucotis townsendii*	uses buildings, caves or mines for roosting; open areas and edge habitat required for tree-top level foraging potential; hibernates in	buildings, caves or mines used for maternity colonies; the only located colony in British Columbia in an attic on	Blue	4	u	
Domestic Rabbit [3]	*Sylvilagus*	introduced, not managed for.	not applicable	*****	5	c	c
Long-tailed Vole	*Microtus longicaudus*	variable; grassy forest openings, forest edges, sedge and grass meadows streambanks and marshes to 4,000 feet	nest underground, under logs or in rotten logs	Yellow	4	t	
Creeping Vole	*Microtis oregoni*	isolated grassy areas in the forest, prefers loose soil with large coarse woody debris	unknown	Yellow	4	t, w	
Townsend's Vole	*Microtis townsendii*	salt marshes and lowland fields and meadows; usually associated with areas with vegetative cover (grass or debris)	nests underground in summer and above ground in winter	Yellow	4	t, w	
Heather Vole	*Phenacomys intermedius*	dry areas near surface water; prefer areas in open conifer forests with plenty of coarse woody debris and grass or other cover	nests below ground under stumps debris and rocks	Yellow	4	t	
Muskrat	*Ondatra zibethica*	wide range of aquatic environments; ponds, sloughs rivers and marshes		Yellow	2	w	

Common Name	Scientific Name	Habitat Notes	Breeding Habitat	Provincial List 1997	Expected Potential for Occurrence[1]	Source	Observed ?
Deer Mouse	*Peromyscus maniculatus*	dry areas		Yellow	5	c	c
House Mouse [3]	*Mus musculus*	primarily human built structure dweller		Yellow	5	w, c	c
Pacific Jumping Mouse	*Zapus trinotatus*	shrubby borders of streams, marshes and sphagnum bogs		Yellow	4	w	
Northern Flying Squirrel	*Glaucomys sabrinus*	conifer and deciduous forests		Yellow	4	w	
Douglas' Squirrel	*Tamiasciurus douglasii*	dense conifer forests		Yellow	5	w,a, c, d, f	a, c, d, f,g,s
Grey Squirrel [3]	*Sciurus*	shaded forests and parkland areas		Yellow	5	w	g
Townsend's Chipmunk	*Tamias townsendii*	dense coastal Douglas fir/ Western red cedar forests; exists in second growth areas		Yellow	5	w, c	c
Eastern cottontail [3]	*Sylvilagus floridanus*	meadows, shrubby and agricultural areas		Yellow	4	w	
Snowshoe hare	*Lepus americanus*	forests, swamps and riverside thickets		Yellow	3	w	
Coyote	*Canis latrans*	hilly terrain with bluffs; adaptable to human settlement		Yellow	5	w, a, c, f	a, c, f,s
Red fox	*Vulpes vulpes*	prefer semi-open country such as agricultural areas, lakeshores, river valleys, natural clearings and tundra areas		Yellow	3	w	
Porcupine	*Erethizom*	deciduous and coniferous forested areas		Yellow	2	w	
Striped skunk	*Mephitis mephitis*	agricultural lands, river valleys and forested		Yellow	5	w, a	a
Ermine (Short-tailed weasel)	*Mustela erminea*	mixed forests, meadow edges, river banks and lakeshores		Yellow	3	w	
Long-tailed weasel	*Mustela frenata*	open grasslands, and parklands near water		Yellow	3	w	
Mink	*Mustela vison*	stream banks, lakeshores and forest edges, large swamps and tidal flats		Yellow	2	w	
River otter	*Lontra canadensis*	shores and waters of lakes, rivers, marshes and ocean bays		Yellow	2	w	
Raccoon	*Procylon lotor*	often forested areas near waterways; attracted to developed areas		Yellow	5	w, c, d	c, d
Cougar	*Felis concolor*	variety of habitats from swamps and wooded river valleys to dense conifer forests		Yellow	1	w	
Bobcat	*Lynx rufus*	swamps, woodlots, second growth and rocky hillsides; adaptable to human settlement leading to use of agricultural lands and city		Yellow	1	w	

Common Name	*Scientific Name*	Habitat Notes	Breeding Habitat	Provincial List 1997	Expected Potential for Occurrence[1]	Source	Observed ?
Black bear	*Ursus americanus*	coniferous or deciduous forests, swamps and berry patches; known to enter settled areas for		Yellow	1	w	t
Black-tailed deer	*Odocoileus h. hemionus*	open conifer forests, parkland areas and river valleys		Yellow	5	h, a, b, c, d, f	a,b,c,d,f ,g,p,s
Fish[4]							
Lamprey sp.	*family Petromyzonidae*	muddy river bottoms		Yellow	3		
Coho salmon	*Oncorhynchus kisutch*	clean flowing water without contaminants or silt is essential for each of the eight salmonid species shown here	clean water, no silt and proper size spawning gravel are required for spawning of all of these salmonid	Yellow	5	h, l, j, l, m, i	l, i
Chum salmon	*Oncorhynchus keta*	also required is an abundance of stream bank vegetation providing the waterway with shade in the warm summer months		Yellow	3	j, l	
Cutthroat trout	*Oncorhynchus clarkii*	coarse woody debris provides complexity to the stream which creates deep pools and faster running sections		Yellow	5	h, l, l,m, i	m, l,i
Chinook	*Oncorhynchus Tshawytscha*			Yellow	5	i	i
Rainbow trout	*Oncorhynchus mykiss*			Yellow	5	l, k	m
Steelhead	*Oncorhynchus mykiss*			Yellow	4	l, k, m	
Sockeye salmon	*Oncorhynchus nerka*			Yellow	1		
Pink salmon	*Oncorhynchus gorbuscha*			Yellow	1		
Sculpin species	*Cottus sp.*			Unknown	5	h	h
Stickleback	*Gasterosteus sp.*			Red/ Yellow?	5	h	h
Brassy minnow	*Hybognathus hankinsoni*			Blue	2	e	
Nooksack dace	*Rhynichthys sp 4*			Red	1	e	

Abbreviations Key

a Sigma Resource Consultants Ltd. 1979
b Sigma Environmental Consultants Ltd. 1982
c Terra Lotic Resources Ltd. 1992
d AXYS Environmental Consulting Ltd. 1994 (site visit 7 June 1994; de vries 1994.)
e CDC 1997
f Stewart Environmental Ltd. 1996
g Axys Environmental Consulting Ltd. (site visits mid-August to early October 1997)
h FISS Search results for Eagle Creek, 22 September,1997
i FISS Search results for Stoney Creek, 22 September,1997
j Delcan Engineers and Planners, 1994
k BCIT. 1997. Written by M. Laurinolli
l Transmountain Pipeline 1990
m Global Fisheries Consultants 1995
n New Pacific Ventures 1997
p Phillips Farevaag Smallengerg (site visits mid-January 1998)
s Strix Environmental Consulting (site visit 24 May 1998)
t Sitings recorded in City of Burnaby files
u Nagorsen, David, W. and R.M. Brigham. 1993. Bats of British Columbia.
v Nagorsen, David, W. 1996. Oppossums, Shrews and Voles of British Columbia.
w Banfield, A.W.F. 1974. The Mammals of Canada.
x Amphibians of the Pacific Northwest
y Amphibians of British Columbia
z Reptiles of British Columbia

Provincial Species Classifications

Red List	Includes any indigenous species or subspecies (taxa) considered to be Extirpated, Endangered, or Threatened in British Columbia. Extirpated taxa no longer exist in the wild in British Columbia, but do occur elsewhere. Endangered taxa are facing imminent extirpation or extinction. Threatened taxa are likely to become endangered if limiting factors are not reversed. Red-listed taxa include those that have been, or are being, evaluated for these designations.
Blue List	Includes any indigenous species or subspecies (taxa) considered to be Vulnerable in British Columbia. Vulnerable taxa are of special concern because of characteristics that make them particularly sensitive to human activities or natural events. Blue-listed taxa are at risk, but are not Extirpated, Endangered or Threatened.
Yellow List	Any indigenous species or subspecies (taxa) which is not at risk in British Columbia. The CDC tracks some Yellow listed taxa which are vulnerable during times of seasonal concentration (e.g., breeding colonies).

Endnotes:

1. Expected potential for occurrence - This rating system is based on reviews of academic and technical reports for the given species. The ranking attempts to numerically estimate the potential presence of that species within the study area. The ranking starts at 1 = low; 2 = low to moderate; 3 = moderate; 4 = high to moderate; and 5 = high.
2. Bat detector data is difficult to identify to the species level. Species groups of similar echolocating bats have been determined and these marked observations are members of these species groups and were not identified to the species level.
3. Introduced species
4. Individual stream reports on the north side of the Burnaby Mountain Park (New pacific Ventures, 1987) resulted in no captures or observations of fish. It has been suggested however, that a number of these streams may potentially contain or support cutthroat trout and coho salmon