

**Appendix 2**

**Expected Occurrence of Wildlife Species In The Cape Roger Curtis Area**

Appendix 2. Expected occurrence of wildlife species in the Cape Roger Curtis area.

Legend:

All species documented or potentially occurring on Bowen Island are included in the list:

y - presence confirmed on Bowen (from reports, survey results, personal communications, or during our reconnaissance survey)

? - presence not confirmed, but likely or possible

Species name grayed - no habitat exists on the Cape Roger Curtis lands for this species.

CDC/COSEWIC status:

CDC: Red = Endangered, Blue = Threatened

COSEWIC: B not rated; DD - Data Deficient; NAR - Not At Risk; SC - Special Concern; T - Threatened; E - Endangered.

Potential Breeder:

\* indicates site is within species breeding range and contains at least some suitable habitat;

p - indicates a lower degree of certainty.

Confirmed at CRC - x indicates that species was reported/observed by one of the following sources:

Billie Gowans (water bird surveys and other observations)

Bowen Nature Club (Christmas Bird Counts; Breeding Bird Counts, bird checklist)

Printed reports

Consultant site visits on Dec 16, 17, 2005

Habitats B by vegetation polygon (see report):

A: 1, 2; B: 3-5; C: 6-8; D: 9, 11; E: 10; F: n/a

Expected Occurrence at CRC

For confirmed species & others very likely to occur

For unconfirmed species that are less likely to occur

e  
Strongest habitat associations

p  
Secondary habitat associations  
Most likely habitats, if species occurs

SPECIES	Docu- mented On Bowen	CDC/ COSEWIC Status	Confirmed at CRC	Potential Breeder at CRC	Expected occurrence at Cape Roger Curtis						
					A shoreline, & or	Rocky bluffs	B dense Douglas-fir,	Typical Habitat Associations by Polygon Type		D Mixed coniferous- deciduous, &	E Deciduous
<u>CLASS AMPHIBIA</u> : Amphibians											
<u>ORDER CAUDATA</u> : Salamanders											
Rough-skinned Newt ( <i>Taricha granulosa</i> )	y								p	p	e
Northwestern Salamander ( <i>Ambystoma gracile</i> )	y								e	e	e
Long-toed Salamander ( <i>A. macrodactylum</i> )	?			*					e	e	e

SPECIES (R=red-listed, B=blue-listed for s. coast)	Docu- mented On Bowen	CDC/ COSEWI C Status	Confirmed at CRC	Potential Breeder at CRC	Expected occurrence at Cape Roger Curtis							
					A. shoreline, &/or	Rocky bluffs	B. dense Douglas-fir.	C. Mature even-aged Douglas-fir	D. Mature, coniferous- deciduous, &	E. Mixed	F. Deciduous	Marine
Ensatina Salamander ( <i>Ensatina eschscholtzii</i> )	y			*			e	e	e		p	
Western Red-backed Salamander ( <i>Plethodon vehiculum</i> )	y			*			e	e	e			
<u>ORDER ANURA</u> : Frogs and Toads												
Western Toad ( <i>Bufo boreas</i> )	y						e	e	e		e	
Pacific Treefrog ( <i>Pseudacris regilla</i> )	y			*	p		e	e	e		e	
Red-legged Frog ( <i>Rana aurora</i> )	y	Blue/SC						p	p		p	
<u>CLASS REPTILIA</u> : Reptiles												
<u>ORDER SQUAMATA</u> : Lizards and Snakes												
Northern Alligator Lizard ( <i>Gerrhonotus coeruleus</i> )	y			*	e		e					
Western Garter Snake ( <i>Thamnophis elegans</i> )	y			*	e		e			e	p	
Northwestern Garter Snake ( <i>T. ordinoides</i> )	y				e		e			e		
Common Garter Snake ( <i>Thamnophis sirtalis</i> )	y									e		e
<u>CLASS AVES</u> : Birds												
<u>ORDER GAVIIFORMES</u> : Loons												
FAMILY GAVIIDAE: Loons												
Red-throated Loon ( <i>Gavia stellata</i> )	y											e
Pacific Loon ( <i>Gavia pacifica</i> )	y		x									e
Common Loon ( <i>Gavia immer</i> )	y		c									e
Yellow-billed Loon ( <i>Gavia adamsii</i> )	?											p
<u>ORDER PODICIPEDIFORMES</u> : Grebes												
FAMILY PODICIPEDIDAE: Grebes												
Pied-billed Grebe ( <i>Podilymbus podiceps</i> )	y											p
Horned Grebe ( <i>Podiceps auritus</i> )	y		x									e
Red-necked Grebe ( <i>Podiceps grisegena</i> )	y		x									e
Eared Grebe ( <i>Podiceps nigricollis</i> )	y		x									e
Western Grebe ( <i>Aechmophorus occidentalis</i> )	y	Red/--	x									e
<u>ORDER PELECANIFORMES</u> : Totipalmate Swimmers												
FAMILY PHALACROCORACIDAE: Cormorants												



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				Potential Breeder at CRC	A. shoreline, & 'or	Rocky bluffs	B. dense Douglas-fir.	Mature even-aged Douglas-fir	C. Mature, coniferous- deciduous, &	D. Mixed E. Deciduous	F. Marine
Surf Scoter ( <i>Melanitta perspicillata</i> )	y	Blue/≡	x								e
White-winged Scoter ( <i>Melanitta fusca</i> )	y		x								e
Black Scoter ( <i>Melanitta nigra</i> )	y		x								e
Long-tailed Duck ( <i>Clangula hyemalis</i> )	y										e
Bufflehead ( <i>Bucephala albeola</i> )	y		x								e
Common Goldeneye ( <i>Bucephala clangula</i> )	y		x								e
Barrow's Goldeneye ( <i>Bucephala islandica</i> )	y		x								e
Hooded Merganser ( <i>Lophodytes cucullatus</i> )	y		x								e
Red-breasted Merganser ( <i>Mergus serrator</i> )	y		x								e
Common Merganser ( <i>Mergus merganser</i> )	y		x								e
<u>ORDER FALCONIFORMES</u> : Diurnal Birds of Prey											
FAMILY ACCIPITRIDAE: Osprey, Eagles and Hawks											
Osprey ( <i>Pandion haliaetus</i> )	y										p
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	y		x	*	e		e	e	e	e	e
Sharp-shinned Hawk ( <i>Accipiter striatus</i> )	y				e		e	e	e	e	
Cooper's Hawk ( <i>Accipiter cooperii</i> )	y		x	*	e		e	e	e	e	
Northern Goshawk ( <i>Accipiter gentilis</i> )	y				p		p				
Red-tailed Hawk ( <i>Buteo jamaicensis</i> )	y		x	*	e		e				
Golden Eagle ( <i>Aquila chrysaetos</i> )	y				p		p				
FAMILY FALCONIDAE: Falcons											
American Kestrel ( <i>Falco sparverius</i> )	y				p	p	e				
Merlin ( <i>Falco columbarius</i> )	y				p	e	e		e		
Peregrine Falcon ( <i>Falco peregrinus</i> )	y	Red T			e		e				e
<u>ORDER GALLIFORMES</u> : Gallinaceous Birds											
FAMILY PHASIANIDAE: Partridge, Grouse, Ptarmigan, Turkey and Quail											
Ring-necked Pheasant ( <i>Phasianus colchicus</i> )	y										
Blue Grouse ( <i>Dendragapus obscurus</i> )	y		x		e	e		p	p	p	
<u>ORDER GRUIFORMES</u> : Cranes, Rails and Allies											

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					A. shorelme. &/or bluffs	B. Rocky dense Douglas-fir.	C. Mature even-aged Douglas-fir	D. Mature coniferous- deciduous. &	E. Mixed	F. Deciduous Marine
FAMILY <b>RALLIDAE</b> : Rails, Gallinules and Coots										
Virginia Rail ( <i>Rallus limicola</i> )	y									
Sora ( <i>Porzana carolina</i> )	?									
American Coot ( <i>Fulica americana</i> )	y									p
FAMILY <b>GRUIDAE</b> : Cranes										
Sandhill Crane ( <i>Grus canadensis</i> )	y	Blue NAR								
<u>ORDER</u> <b>CHARADRIIFORMES</b> : Shorebirds, Gulls, Auks and Allies										
FAMILY <b>CHARADRIIDAE</b> : Plovers										
Black-bellied Plover ( <i>Pluvialis squatarola</i> )	y		x			e				
Killdeer ( <i>Charadrius vociferus</i> )	y					p				
FAMILY <b>HAEMATOPODIDAE</b> : Oystercatcher										
Black Oystercatcher ( <i>Haematopus bachmani</i> )	y		x			e				
FAMILY <b>SCOLOPACIDAE</b> : Sandpipers, Phalaropes and Allies										
Greater Yellowlegs ( <i>Tringa melanoleuca</i> )	y					p				
Lesser Yellowlegs ( <i>Tringa flavipes</i> )	?					p				
Solitary Sandpiper ( <i>Tringa solitaria</i> )	y					p				
Ruddy Turnstone ( <i>Arenaria interpres</i> )	y					p				
Black Turnstone ( <i>Arenaria melanocephala</i> )	y		x			e				
Surf-bird ( <i>Aphriza virgata</i> )	y		x			e				
Semipalmated Sandpiper ( <i>Calidris pusilla</i> )	?					p				
Western Sandpiper ( <i>Calidris mauri</i> )	?					p				
Least Sandpiper ( <i>Calidris minutilla</i> )	?					p				
Rock Sandpiper ( <i>Calidris pilocnemis</i> )	y					e				
Dunlin ( <i>Calidris alpina</i> )	?					p				
Common Snipe ( <i>Gallinago gallinago</i> )	?									
FAMILY <b>LARIDAE</b> : Jaegers, Skua, Gulls and Terns										
Bonaparte's Gull ( <i>Larus philadelphia</i> )	y		x							e

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					Typical Habitat Associations by Polygon Type							
					A. shoreline, & or	Rocky bluffs	B. dense Douglas-fir.	Mature even-aged Douglas-fir	C. Mature, coniferous- deciduous, &	D. Mixed	E. Deciduous	F. Marine
Heermann's Gull ( <i>Larus heermanni</i> )	y		x									e
Mew Gull ( <i>Larus canus</i> )	y		x									e
Ring-billed Gull ( <i>Larus delawarensis</i> )	y											e
California Gull ( <i>Larus californicus</i> )	y											e
Herring Gull ( <i>Larus argentatus</i> )	y		x									e
Thayer's Gull ( <i>Larus thayeri</i> )	y		x									e
Western Gull ( <i>Larus occidentalis</i> )	y											e
Glaucous-winged Gull ( <i>Larus glaucescens</i> )	y		x									e
Black-legged Kittiwake ( <i>Rissa tridactyla</i> )	y		x									e
Caspian Tern ( <i>Sterna caspia</i> )	?	Blue/NAR										p
Common Tern ( <i>Sterna hirundo</i> )	?											e
FAMILY <b>ALCIDAE</b> : Auks, Murres, Puffins												
Common Murre ( <i>Uria aalga</i> )	y		x									e
Pigeon Guillemot ( <i>Cepphus columba</i> )	y		x									e
Marbled Murrelet ( <i>Brachyramphus marmoratus</i> )	y	Red/T	x									e
Rhinoceros Auklet ( <i>Cerorhinca monocerata</i> )	y		x									e
<u>ORDER COLUMBIDAE</u> : Pigeons and Doves												
FAMILY <b>COLUMBIDAE</b> : Pigeons and Doves												
Rock Pigeon ( <i>Columba livia</i> )	y					p		p				
Band-tailed Pigeon ( <i>Patagioenas fasciata</i> )	y	Blue/B	x	*		e		e		e		e
Mourning Dove ( <i>Zenaidura macroura</i> )	?			*		p						
FAMILY <b>STRIGIDAE</b> : Typical Owls												
Western Screech-Owl ( <i>Megascops kennicottii</i> )	y	Blue/SC		*		p		p		e		e
Great Horned Owl ( <i>Bubo virginianus</i> )	y			*		e		e		e		e
Northern Pygmy-Owl ( <i>Glaucidium gnoma</i> )	y					p		p				
Barred Owl ( <i>Strix varia</i> )	y		x	*		p		e		e		e
Short-eared Owl ( <i>Asio flammeus</i> )	y	Blue/SC										
Northern Saw-whet Owl ( <i>Aegolius acadicus</i> )	y		x	*		e		e		p		e
<u>ORDER CAPRIMULGIFORMES</u> : Goatsuckers and Allies												
FAMILY <b>CAPRIMULGIDAE</b> : Goatsuckers												
Common Nighthawk ( <i>Chordeiles minor</i> )	y					p		r		p		

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<b>ORDER APODIFORMES:</b> Swifts and Hummingbirds										
<b>FAMILY APODIDAE:</b> Swifts										
Black Swift ( <i>Cypseloides niger</i> )	y			p		e	e	e		
Vaux's Swift ( <i>Chaetura vauxi</i> )	y			*		e	e	e		
<b>FAMILY TROCHILIDAE:</b> hummingbirds										
Anna's Hummingbird ( <i>Calypte anna</i> )	y		x					e	e	
Rufous Hummingbird ( <i>Selasphorus rufus</i> )	y		x	*	e	e	p	e	e	
Calliope Hummingbird ( <i>Stellula calliope</i> )	y									
<b>ORDER CORACIIFORMES:</b> Kingfisher										
<b>FAMILY ALCEDINIDAE:</b> Kingfishers										
Belted Kingfisher ( <i>Ceryle alcyon</i> )	y		x		e					
<b>ORDER PICIFORMES:</b> Woodpeckers and Allies										
<b>FAMILY PICIDAE:</b> Woodpeckers										
Red-breasted Sapsucker ( <i>Sphyrapicus ruber</i> )	y		x	*	p	p	e	e	p	
Downy Woodpecker ( <i>Picoides pubescens</i> )	y		x	*	e	p	p	e	e	
Hairy Woodpecker ( <i>Picoides villosus</i> )	y		x	*	e	p	e	e	e	
Northern Flicker ( <i>Colaptes auratus</i> )	y		x	*	e	e	e	e	e	
Pileated Woodpecker ( <i>Dryocopus pileatus</i> )	y		x	*	e	e	e	e	e	
<b>ORDER PASSERIFORMES:</b> Passerine Birds										
<b>FAMILY TYRANNIDAE:</b> Tyrant Flycatchers										
Olive-sided Flycatcher ( <i>Contopus cooperi</i> )	y		x	*	e	e		e		
Western Wood-pewee ( <i>Contopus sordidulus</i> )	y		x	*		e	p	e	e	
Willow Flycatcher ( <i>Empidonax traillii</i> )	y							p	p	
Hammond's Flycatcher ( <i>Empidonax hammondi</i> )	y		x	p	e	e	e	e		
Dusky Flycatcher ( <i>Empidonax oberholseri</i> )	?				p	p		p		
Pacific-slope Flycatcher ( <i>Empidonax difficilis</i> )	y		x	*				e		
Say's Pheobe ( <i>Sayornis saya</i> )	y				p					
Eastern Kingbird ( <i>Tyrannus tyrannus</i> )	y									p
<b>FAMILY VEREONIDAE:</b> Vireos										
Cassin's Vireo ( <i>Vireo cassinii</i> )	y		x	*	e			e		





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FAMILY <b>REGULIDAE</b> : Kinglets.										
Golden-crowned Kinglet ( <i>Regulus satrapa</i> )	y		x	*	e		e	e	e	e
Ruby-crowned Kinglet ( <i>Regulus calendula</i> )	y		x		e		p	p	e	e
FAMILY <b>MUSCICAPIDAE</b> : Bluebirds, Thrushes and Allies										
Western Bluebird ( <i>Sialia mexicana</i> )	?	Red/B		(*)	p					
Townsend's Solitaire ( <i>Myadestes townsendi</i> )	y		x		e		p			
Swainson's Thrush ( <i>Catharus ustulatus</i> )	y		x	*	e		e	e	e	e
Hermit Thrush ( <i>Catharus guttatus</i> )	y				p		e	e	e	
American Robin ( <i>Turdus migratorius</i> )	y		x	*	e		e	e	e	e
Varied Thrush ( <i>Ixoreus naevius</i> )	y		x	*				e	e	
FAMILY <b>STURNIDAE</b> : Starlings and Allies										
European Starling ( <i>Sturnus vulgaris</i> )	y			*	e		e	e	e	e
FAMILY <b>MOTACILLIDAE</b> : Wagtails and Pipits										
American Pipit ( <i>Anthus rubescens</i> )	y				p					
FAMILY <b>BOMBYCILLIDAE</b> : Waxwings										
Cedar Waxwing ( <i>Bombycilla cedrorum</i> )	y		x	*	e				e	e
FAMILY <b>PARULIDAE</b> : Wood-Warblers, Sparrows, Blackbirds and Allies										
Orange-crowned Warbler ( <i>Vermivora celata</i> )	y		x	*	e		e		e	e
Yellow Warbler ( <i>Dendroica petechia</i> )	y			*					e	e
Yellow-rumped Warbler ( <i>Dendroica coronata</i> )	y		x	*	e		e	e	e	e
Black-throated Gray Warbler ( <i>D. nigrescens</i> )	y		x	*				p	e	e
Townsend's Warbler ( <i>Dendroica townsendi</i> )	y		x	*			e	e	e	
MacGillivray's Warbler ( <i>Oporornis tolmiei</i> )	y		x	*	e				e	e
Common Yellowthroat ( <i>Geothlypis trichas</i> )	y									
Wilson's Warbler ( <i>Wilsonia pusilla</i> )	y		x	*	e				e	e
FAMILY <b>TRAUPIDAE</b> : Tanagers										
Western Tanager ( <i>Piranga ludoviciana</i> )	y		x	*	e		p		e	p
FAMILY <b>CARDINALIDAE</b> : Cardinals, Grosbeaks and Allies										

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Black-headed Grosbeak ( <i>Pheucticus melanocephalus</i> )	y		x	*					e	e
Lazuli Bunting ( <i>Passerina amoena</i> )	y			*	p			p		
FAMILY <b>EMBERIZIDAE</b> : Towhees, Sparrows, Longspurs and Allies										
Spotted Towhee ( <i>Pipilo maculatus</i> )	y		x	*	p			p	e	e
Chipping Sparrow ( <i>Spizella passerina</i> )	y				p			p		
Savannah Sparrow ( <i>Passerculus sandwichensis</i> )	y		x	*	e					
Fox Sparrow ( <i>Passerella</i> spp/ssp)	y		x		e				e	e
Song Sparrow ( <i>Melospiza melodia</i> )	y		x	*	e			e	e	e
Lincoln's Sparrow ( <i>Melospiza lincolni</i> )	?				p			p		p
White-crowned Sparrow ( <i>Zonotrichia leucophrys</i> )	y		x	*	e			e		
Golden-crowned Sparrow ( <i>Zonotrichia atricapilla</i> )	y				e			p		
Dark-eyed Junco ( <i>Junco hyemalis</i> )	y		x		e			e	e	
FAMILY <b>ICTERIDAE</b> : Blackbirds, Orioles and Allies										
Red-winged Blackbird ( <i>Agelaius phoeniceus</i> )	y									
Yellow-headed Blackbird ( <i>Xanthocephalus xanthocephalus</i> )	y									
Brewer's Blackbird ( <i>Euphagus cyanocephalus</i> )										
Brown-headed Cowbird ( <i>Molothrus ater</i> )	y		x	*	e			e	e	e
Bullock's Oriole ( <i>Icterus bullockii</i> )	y			*					e	e
FAMILY <b>FRINGILLIDAE</b> : Cardueline Finches and Allies										
Gray-crowned Rosy Finch ( <i>Leucosticte tephrocotis</i> )	y		x		e					
Pine Grosbeak ( <i>Pinicola enucleator</i> )	?				p			p		
Purple Finch ( <i>Carpodacus purpureus</i> )	y				e				e	e
House Finch ( <i>Carpodacus mexicanus</i> )	y		x	*	e				e	e
Red Crossbill ( <i>Loxia curvirostra</i> )	y		x		e			e	e	

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					A. shoreline & or bluffs	B. Rocky dense Douglas-fir	C. Mature even-aged Douglas-fir	D. Mature coniferous- deciduous	E. Mixed &	F. Deciduous Marine
Common Redpoll ( <i>Carduelis flammica</i> )	y				p				p	
Pine Siskin ( <i>Carduelis pinus</i> )	y		x		e		e	e	e	e
American Goldfinch ( <i>Carduelis tristis</i> )	y			*	e				e	e
Evening Grosbeak ( <i>Coccothraustes vespertinus</i> )	y			*					e	e
<b>CLASS MAMMALIA: Mammals</b>										
<b>ORDER INSECTIVORA: Insectivores</b>										
<b>FAMILY SORICIDAE: Shrews</b>										
Common Shrew ( <i>Sorex cinereus</i> )	One or more									
Dusky Shrew ( <i>Sorex monticolus</i> )								e?	e?	
Vagrant Shrew ( <i>Sorex vagrans</i> )	SPP						e	e	e	e
<b>ORDER CHIROPTERA: Bats</b>										
<b>FAMILY VESPERTILIONIDAE: Vesperilionid Bats</b>										
Big Brown Bat ( <i>Eptesicus fuscus</i> )	?			*	p		p	p	p	
Silver-haired Bat ( <i>Lasionycteris noctivangans</i> )	?			*			p	p	p	
Hoary Bat ( <i>Lasiurus cinereus</i> )	?						p	p	p	
California Myotis ( <i>Myotis californicus</i> )	?			*	p		e	e	e	
Western Long-eared Myotis ( <i>Myotis evotis</i> )	?				p		e	e	e	
Keen's Long-eared Myotis ( <i>Myotis keenii</i> )	?	Red/DD		*	p		p	p	p	
Little Brown Myotis ( <i>Myotis lucifugus</i> )	y			*	p		e	e	e	
Long-legged Myotis ( <i>Myotis volans</i> )	?			*	p		p	p	p	
Yuma Myotis ( <i>Myotis yumanensis</i> )	?			*	p		e	e	e	
Townsend's Big-eared Bat ( <i>Corynorhinus townsendii</i> )	?	Blue=B		*	p		p	p	p	
<b>FAMILY ARVICOLIDAE: Voles and Lemmings</b>										
Townsend's Vole ( <i>Microtus townsendii</i> )	y			?					p	p
<b>FAMILY CASTORIDAE: Beavers</b>										
Beaver ( <i>Castor canadensis</i> )	y				p					
<b>FAMILY CRICETIDAE: Cricetids</b>										
Keen's Mouse ( <i>Peromyscus keenii</i> )							e	e	e	e
Deer Mouse ( <i>Peromyscus maniculatus</i> )	y						?	?	?	?



SPECIES (R=red-listed, B=blue-listed for s. coast)	Docu- mented On Bowen	CDC/ COSEWI C Status	Confirmed at CRC	Potential Breeder at CRC	Expected occurrence at Cape Roger Curtis					
					A. Rocky shoreline &/or bluffs	B. dense Douglas-fir	C. Mature even-aged Douglas-fir	D. Mature coniferous-deciduous	E. Mixed deciduous	F. Marine
<b>FAMILY CERVIDAE</b> Cervids										
Mule Deer ( <i>Odocoileus hemionus</i> )	y		x		e	e	e	e	e	
Number of Species	226	17	105		122	94	74	112	81	59

**Appendix 3**

**Threatened and Endangered Vertebrate Species of the Chilliwack and  
Sunshine Coast Forest Districts Potentially at Cape Roger Curtis**

Appendix 3. Threatened and Endangered Vertebrate Species of the Chilliwack and Sunshine Coast Forest Districts that Potentially at Cape Roger Curtis.

SPECIES	STATUS <sup>i, ii</sup> iii	HABITAT	SEASON/DURATION ON BOWEN ISLAND	EXPECTED USE OF CRC
Red-legged Frog <i>Rana aurora</i>	Provincial BLUE list COSEWIC: Special Concern	Live and breed in forested slow moving creeks and ponds. Forage in forested uplands, sometimes hundreds of metres from water. <sup>15</sup>	Year round occurrence in permanent wetland habitats. Hibernate over winter.	Suitable creek habitat occurs. A pond and the western property boundary may be suitable for breeding. Would occur in moister forest habitats.
Western Grebe <i>Aechmophorus occidentalis</i>	Provincial Red List COSEWIC: Not addressed	The coast is outside the normal breeding area. Winter habitats include sheltered bays, inlets, harbours, channels, lagoons, and estuaries along the coast. Small numbers winter in the interior in large lakes and sloughs, and slow-moving rivers. The diet comprises fish (80-100%), crustaceans, worms, and insects. <sup>3</sup>	Fairly common resident in marine areas for 8 months/year, between mid September and mid May.	Occasional occurrence off cape.
Double-crested Cormorant <i>Phalacrocorax auritus</i>	Provincial Red List COSEWIC: Not at risk	Forages primarily in marine habitats, but also visits coastal freshwater lakes on southern Vancouver Island and occasionally on the Fraser Lowlands. Cormorants feed primarily on fish. <sup>3</sup>	Non breeding birds may occur at any time of year.	Occurs on regularly in waters off cape and may roost on low rocky points.
American Bittern <i>Botaurus lentiginosus</i>	Provincial Blue List COSEWIC: Not addressed	Breeds in wet areas with dense growths of tall emergent vegetation or tall grasses adjacent to freshwater sloughs, marshes, swamps, and shallow, protected sections of lakes between sea level and 1300 m elevation. It forages primarily in marshes, but also in other shallow water bodies such as lake edges, where it feeds on insects, fish, crustaceans, amphibians, snakes, and small mammals. <sup>3</sup>	Present for 5 or 6 months between April and September; rare in winter along the coast.	Some suitable habitat occurs around larger wetlands on island, but not at cape.
Great Blue Heron <i>Ardea herodias</i>	Provincial Blue list COSEWIC: coastal <i>A. h. fannini</i> vulnerable	Usually colonial; nest in trees < 8 km from foraging habitats (most < 3 km). Preferred foraging habitat during breeding season: tidal mud flats with large eelgrass meadows, estuaries, slow-moving rivers, sloughs, marshy lakes. <sup>3</sup>	Fairly common resident 12 months of year in Georgia Depression. A small number of pairs (ca 3) often nest in Snug Cove.	Small numbers of herons regularly forage or roost in study area.
Green Heron	Provincial	Small ponds, sloughs, lakes, slow-moving rivers, and marshy	May occur or breed during	Possible in



SPECIES	STATUS <sup>i</sup> <sup>ii</sup> <sup>iii</sup>	HABITAT	SEASON/DURATION ON BOWEN ISLAND	EXPECTED USE OF CRC
<i>Butorides virescens</i>	Blue list COSEWIC: not addressed	areas, typically sheltered by thickets of willow or alder, between sea level and 610 m elevation. Nests in trees, as far as 1 km from water. <sup>3</sup>	3-4 months in summer.	deciduous area near creeks.
Surf Scoter ( <i>Melanitta perspicillata</i> )	Provincial Blue list COSEWIC: Not addressed	Breeding in B.C. restricted to a few locations in Peace River area, for which it is listed. Non breeding habitats include open shallow (generally < 6m) coastal waters of bays, beaches, spits, and points. <sup>5</sup>	Wintering, migrant, and non breeding birds may occur year around.	All marine areas, particularly the steep sided island shorelines that support bivalves.
Peregrine Falcon <i>Falco peregrinis anatum</i>	Provincial Red list COSEWIC: Endangered	Typically nests on inaccessible cliff ledges, often overlooking wetlands and other open areas; on the south coast, overlooking marine waters, large lakes, and rivers. Forage in areas where prey bird species congregate, such as marshes and estuaries. <sup>3</sup>	Potentially present for 12 months of year but limited suitable nesting sites occur in the study area.	Occasional use expected, especially during non breeding bird concentrations.
Sandhill Crane ( <i>Grus canadensis tabida</i> )	Provincial Blue List COSEWIC: Not at risk	Breeds in isolated bogs, marshes, swamps, and meadows with heavy emergent growth. Nesting wetlands are >2 ha in size and are usually surrounded by a narrow strip of meadow backed by coniferous forest. <sup>3</sup>	Occurs, where, present for about 6-7 months between March and September <sup>3</sup> ; Reported on Bowen I.	Out of normal range; habitat not suitable on cape.
Caspian Tern ( <i>Sterna caspia</i> )	Provincial Blue List COSEWIC: Vulnerable	Nests on sandy or rocky islands in lakes or along the coast. Forages along beaches, tidal mudflats, and sheltered bays. In this area, occur only in coastal and agricultural habitats. <sup>3</sup>	Occur in B.C. between late April and the end of October. <sup>7</sup>	Out of expected range, but some offshore occurrence possible.
Marbled Murrelet <i>Brachyramphus marmoratus</i>	Provincial Red list COSEWIC: Threatened	Nest in trees in old-growth coniferous forests and sometimes in mature forests, particularly in moist stands with well-developed epiphytic mosses on tree branches. Forage in bays, inlets, fjords, and on the open ocean. Highest use in areas where prey are concentrated, such as up-welling areas, mouths of bays, underwater sills, tidal rips, narrow passages, shallow banks, and kelp beds. Occasionally feed in freshwater lakes during the breeding season, especially where sockeye salmon are present. <sup>3</sup> Forests of study area are too young to provide nest sites but suitable habitat exists nearby.	Possible during 12 months of the year, but most likely during the non breeding period.	Occur off CRC in small numbers.
Band-tailed Pigeon <i>Columba fasciata</i>	Provincial Blue list COSEWIC: not addressed	Requires maturing mixed or coniferous forest for breeding and openings, farmlands and shorelines for feeding. Feeds on berries and fruit in the fall. Uses taller trees and dead trees for perching.	Expected as breeding species and summer resident.	All forested and riparian areas of CRC provide suitable habitat for

SPECIES	STATUS <sup>i, ii</sup> iii	HABITAT	SEASON/DURATION ON BOWEN ISLAND	EXPECTED USE OF CRC
				this species.
Western Screech-owl ( <i>Otus k. kennicottii</i> )	Provincial Blue List COSEWIC Special Concern	This owl prefers open forest for foraging and requires cavities in old, large trees for nesting and roosting. Modern forestry practices have created large areas of dense young forests that have very few suitable nesting snags. Populations have apparently declined in southern Vancouver Island and the Lower Mainland concurrently with the recent arrival of the Barred Owl, which is likely a predator of this species <sup>1</sup> .	Resident in the Georgia Depression.	May roost and/or nest on the site.
Lewis=s Woodpecker <i>Melanerpes lewis</i>	Provincial Red List COSEWIC: Special concern	Inhabits open habitats with dead wood such as edges of cleared or burned forest, woodlots, and wooded riparian areas. Needs large dead or decaying limbs or trunks for nest sites. Suitable habitat has declined in the Georgia Depression.	Possible breeding bird, occurring between April and September, but may be extirpated from the Georgia Depression.	Open bluffy habitats (See Type A) are suitable, but considered to be extirpated.
Horned Lark <i>Eremophila alpestris strigata</i>	Provincial Red List COSEWIC: Not addressed	Nests and forages in generally barren areas with sparse or short vegetation, such as farmlands, prairies, and mowed fields. Only a few individuals may occur in three locations in the Fraser Valley. <sup>3</sup>	In Fraser Valley between April and September (5-6 months).	Out of expected range. Brief stops possible above bluffs during migration.
Purple Martin <i>Progne subis</i>	Provincial Red List COSEWIC: Not addressed	Nest in areas near water where snags and woodpecker holes provide nesting opportunities. In B.C., almost all nesting is in artificial nest boxes associated with estuarine mud flats. <sup>3</sup>	In south coastal areas between April and September (6 months).	No suitable habitat.
Western Bluebird <i>Sialia mexicana</i>	Provincial Red list COSEWIC: not addressed	Requires nesting cavities in dead snags or stumps in open woodlands, burned areas or edges. Populations have declined in the Georgia Depression due to loss of habitat.	Would occur May to September, but is considered to be recently extirpated.	Open bluffy habitats (See Type A) are suitable, but considered to be extirpated.
Townsend=s Big-eared Bat <i>Corynorhinus townsendii</i>	Provincial Blue list COSEWIC: Not addressed	Occupies a wide variety of habitats: distribution strongly correlated with availability of caves or cave-like roosts, including buildings. <sup>2</sup>	Resident all year. Hibernate during winter; active from late May to mid Sept. (4 months). <sup>11</sup>	Some foraging possible; roosting or denning possible in open bluffy habitats.
Keen=s Long-	Provincial	Appears to be a solitary species associated with coastal forest	Residency period unknown.	Some foraging

SPECIES	STATUS <sup>1,2</sup> <sub>iii</sub>	HABITAT	SEASON/DURATION ON BOWEN ISLAND	EXPECTED USE OF CRC
earred Myotis <i>Myotis keenii</i>	Red list COSEWIC: Vulnerable	habitat, where tree cavities, rock crevices, and small caves are suspected to be typical summer roosting sites. <sup>2</sup>	Active period not reported for most of coast <sup>3</sup> (but appears to be mid May to mid Sept. on QCI <sup>iv</sup> ).	possible; roosting or denning possible in open bluffy habitats.
Killer Whale <i>Orcinus orca</i>	Provincially Red listed (N resident & transient) COSEWIC: Threatened	Occur in all coastal waters of B.C. Residents feed on fish, primarily salmon, and transients feed on marine mammals, largely harbour seals.	Present year around, but most residents abundant in inshore waters during the summer months.	Probably occur regularly in adjacent areas of Georgia Strait.

The above list contains species classified as follows:

Conservation Data Centre (CDC) Provincial list: blue (vulnerable) or red (threatened or endangered)

or

COESWIC: threatened or endangered.

All species classified as threatened or endangered by COSEWIC were also classified as Red- or Blue-listed by CDC.

## METHODS for Appendix B

Species lists used included the Provincial Government=s Rare Vertebrate Animal Tracking List for the Chilliwack Forest and Sunshine Coast Districts, produced by the B.C. Conservation Data Centre (CDC) of the Ministry of Sustainable Resource Management, and the Committed on the Status of Endangered Wildlife in Canada=s (COSEWIC) list of rare or endangered vertebrates of British Columbia published on the internet.

Information on the biology and distribution of the species was obtained from several published sources, including reports on rare vertebrate species of B.C. that were published jointly by the Ministry of Water, Land and Air Protection and the Ministry of Forests.

## NOTES

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- i. B.C. Conservation Data Centre: Rare vertebrate animal tracking list. Chilliwack Forest District. April 26, 1999.
- ii. Cannings, S.G., L.R. Ramsay, D.F. Fraser. 1999. Rare amphibians, reptiles, and mammals of British Columbia. Wildl. Branch and Resour. Inv. Branch, B.C. Min. Environ., Lands and Parks, Victoria, B.C. 198pp.
- iii. D.F. Fraser, W.L. Harper, S.G. Cannings, J.M. Cooper. 1999. Rare birds of British Columbia. Wildl. Branch and Resour. Inv. Branch, B.C. Min. Environ., Lands and Parks, Victoria, B.C. 244pp.
- iv. Cannings, S.G., L.R. Ramsay, D.F. Fraser. 1999. Rare amphibians, reptiles, and mammals of British Columbia. Wildl. Branch and Resour. Inv. Branch, B.C. Min. Environ., Lands and Parks, Victoria, B.C. 198pp.
- v. Quoted from COSEWIC web site, December 2004.
- vi. Nagorsen, D.W. and R.M. Brigham. 1993. Bats of British Columbia: Volume I The Mammals of British Columbia. Royal B.C. Museum Handbook. UBC Press, Vancouver.
- vii. Burles, Doug. 2000. Personal Communication. Parks Canada. Queen Charlotte City.