

**Appendix F1
Native Fauna Record,
Happy Valley**

Table 1. Amphibians that may occur in the vicinity of Happy Valley (from Bamford 2000) and those recorded during the surveys by Bamford (2000), Bamford and Wilcox (2004) and this study (September and November 2007). Status described at end. ‘x’ indicates species recorded directly.

Species	Status	Bamford (2000)	Bamford and Wilcox (2004)	Sep 2007	Nov 2007
Myobatrachidae (ground frogs)					
Quacking Froglet	<i>Crinia georgiana</i>	x		x	x
Glauert’s Froglet	<i>Crinia glauerti</i>	x		x	
Sandplain Froglet	<i>Crinia insignifera</i>	x		x	
Granite Froglet	<i>Crinia pseudinsignifera</i>				
Green-bellied Froglet	<i>Geocrinia leai</i>			x	
Moaning Frog	<i>Heleioporus eyrei</i>	x			
Chocolate Burrowing Frog	<i>Heleioporus inornatus</i>				
Marbled Burrowing Frog	<i>Heleioporus psammophilus</i>	x			
Pobblebonk	<i>Limnodynastes dorsalis</i>	x			
Guenther’s Toadlet	<i>Pseudophryne guentheri</i>				
Hylidae (tree frogs)					
Slender Tree Frog	<i>Litoria adelaidensis</i>	x		x	
Motorbike Frog	<i>Litoria moorei</i>				
Species richness		7	0	5	1

Table 2. Reptiles that may occur in the vicinity of Happy Valley (from Bamford 2000) and those recorded during the surveys by Bamford (2000), Bamford and Wilcox (2004) and this study (September and November 2007). Status is described at end. ‘x’ indicates species recorded directly, ‘s’ indicates skeletal remains.

Species	Status	Bamford (2000)	Bamford and Wilcox (2004)	Sep 2007	Nov 2007
Chelidae (side-neck tortoises)					
South-West Long-necked Tortoise	<i>Chelodina oblonga</i>	x			
Gekkonidae (geckoes)					
Speckled Stone Gecko	<i>Diplodactylus polyophthalmus</i>	x			x
Marbled Gecko	<i>Christinus marmoratus</i>			x	x
Barking Gecko	<i>Underwoodisaurus milii</i>				
Pygopodidae (legless-lizards)					
Pretty Worm-Lizard	<i>Aprasia pulchella</i>	x			x
Sandplain Worm-Lizard	<i>Aprasia repens</i>				x
Burton’s Legless-Lizard	<i>Lialis burtonis</i>				x
Common Scalefoot	<i>Pygopus lepidopodus</i>				
Agamidae (dragon lizards)					
Bearded Dragon	<i>Pogona minor</i>	x			x
Varanidae (monitors or goannas)					
Gould’s Sand Goanna	<i>Varanus gouldii</i>				x
Rosenberg’s Goanna	<i>Varanus rosenbergi</i>				x
Scincidae (skink lizards)					
	<i>Acritoscincus trilineatum</i>	x			x
Fence Skink	<i>Cryptoblepharus plagiocephalus</i>	x			x
	<i>Ctenotus australis</i>				

Species	Status	Bamford (2000)	Bamford and Wilcox (2004)	Sep 2007	Nov 2007
Tiger Snake	<i>Notechis scutatus</i>	x			
Dugite	<i>Pseudonaja affinis</i>				x
Jan's Bandy-bandy	<i>Simoselaps bertholdi</i>				
Gould's Snake	<i>Parasuta gouldii</i>				
Black-backed Snake	<i>Parasuta nigriceps</i>				
Species richness		18	1	5	22

Table 3. Birds that may occur in the vicinity of Happy Valley (from Bamford 2000) and those recorded during the surveys by Bamford (2000), Bamford and Wilcox (2004) and this study (September and November 2007). Annotations on the November 2007 observations are also provided. Status is described at end. 'x' indicates species recorded directly, 'n' indicates species seen near the site.

Species	Status	Bamford (2000)	Bamford and Wilcox (2004)	Sep 2007	Nov 2007	November 2007 Notes
Casuariidae (cassowaries and emus)						
Emu	<i>Dromaius novaehollandiae</i>	x		x	x	Tracks, droppings throughout site. One dead bird in fence between Happy Valley north and south.
Phasianidae (pheasants and quails)						
Brown Quail	<i>Coturnix ypsilophora</i>					
Stubble Quail	<i>Coturnix pectoralis</i>				x	One flushed at Happy Valley south.
Anatidae (ducks, geese and swans)						
Black Swan	<i>Cygnus atratus</i>					
Australian Shelduck	<i>Tadorna tadornoides</i>	x		x		
Pacific Black Duck	<i>Anas superciliosus</i>	x			n	Seen occasionally on ponds in paddocks to the west of the site.
Grey Teal	<i>Anas gibberifrons</i>	x			n	Seen occasionally on ponds in paddocks to the west of the site.
Australasian Shoveler	<i>Anas rhynchotis</i>					

Species	Status	Bamford (2000)	Bamford and Wilcox (2004)	Sep 2007	Nov 2007	November 2007 Notes
Hardhead (White-eyed Duck)	<i>Aythya australis</i>					
Australian Wood Duck	<i>Chenonetta jubata</i>			x	n	Seen occasionally on ponds in paddocks to the west of the site.
Podicepsidae (grebes)						
Hoary-headed Grebe	<i>Poliiocephalus poliocephalus</i>					
Australasian Grebe	<i>Tachybaptus novaehollandiae</i>	x			n	Seen occasionally on ponds in paddocks to the west of the site.
Phalacrocoracidae (cormorants)						
Little Pied Cormorant	<i>Phalacrocorax melanoleucos</i>					
Ardeidae (herons and egrets)						
White-faced Heron	<i>Egretta novaehollandiae</i>	x			n	Seen occasionally in paddocks to the west of the site.
Little Egret	<i>Egretta garzetta</i>					
White-necked Heron	<i>Ardea pacifica</i>					
Great Egret	<i>Egretta alba</i>	CS1				
Cattle Egret	<i>Ardeola ibis</i>	CS1				

Species	Status	Bamford (2000)	Bamford and Wilcox (2004)	Sep 2007	Nov 2007	November 2007 Notes
Nankeen Night Heron	<i>Nycticorax caledonicus</i>					
Plataleidae (ibis and spoonbills)						
Glossy Ibis	<i>Plegadis falcinellus</i>	CS1				
Australian White Ibis	<i>Threskiornis molucca</i>		x		n	Seen most days in paddocks to the west of the site.
Straw-necked Ibis	<i>Threskiornis spinicollis</i>		x		n	Seen most days in paddocks to the west of the site.
Yellow-billed Spoonbill	<i>Platalea flavipes</i>				n	Seen once on pond in paddocks to the west of the site.
Accipitridae (kites, hawks and eagles)						
Square-tailed Kite	<i>Lophoictinia isura</i>	CS3	x	x		
Black-shouldered Kite	<i>Elanus axillaris</i>					
Whistling Kite	<i>Haliastur sphenurus</i>					
Brown Goshawk	<i>Accipiter fasciatus</i>		x		x	One seen occasionally in woodland.
Collared Sparrowhawk	<i>Accipiter cirrhocephalus</i>				x	
Wedge-tailed Eagle	<i>Aquila audax</i>		x	x		

Species	Status	Bamford (2000)	Bamford and Wilcox (2004)	Sep 2007	Nov 2007	November 2007 Notes
Little Eagle	<i>Hieraaetus morphnoides</i>	x				
Falconidae (falcons)						
Peregrine Falcon	<i>Falco peregrinus</i>	CS1	x			
Australian Hobby	<i>Falco longipennis</i>					
Brown Falcon	<i>Falco berigora</i>		x			
Nankeen Kestrel	<i>Falco cenchroides</i>		x	x	n	Seen in paddocks at edge of site.
Turnicidae (button-quails)						
Painted Button-quail	<i>Turnix varia</i>		x	x		

Rallidae (crakes and rails)

Buff-banded Rail *Rallus philippensis*

Baillon's Crake *Porzana pusilla*

Spotless Crake *Porzana tabuensis*

Dusky Moorhen *Gallinula tenebrosa*

Purple Swamphen *Porphyrio porphyrio* x

Eurasian Coot *Fulica atra*

Scolopacidae (sandpipers)

Wood Sandpiper *Tringa glareola* CS1

Marsh Sandpiper *Tringa stagnatilis* CS1

Recurvirostridae (stilts and avocets)

Black-winged Stilt *Himantopus himantopus*

Charadriidae (lapwings and plovers)

Black-fronted Dotterel *Elsyornis melanops*

Red-kneed Dotterel *Erythrogonys cinctus*

Columbidae (pigeons and doves)

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Laughing Turtle-Dove	<i>Streptopelia senegalensis</i>	INT					
Common Bronzewing	<i>Phaps chalcoptera</i>		x		x	x	Ones and twos seen in woodland daily.
Crested Pigeon	<i>Ocyphaps lophotes</i>		x		x	n	Seen occasionally in paddocks at western edge of site.
Cacatuidae (cockatoos)							
Forest Red-tailed Black-Cockatoo	<i>Calyptorhynchus banksii naso</i>	CS1	x	x	x	x	Up to five seen in woodland daily.
Carnaby's Cockatoo	<i>Calyptorhynchus latirostris</i>	CS1	x	x	x	x	Ones and twos seen in woodland daily. Flock of 45 seen feeding in paddocks at western edge of site.
Baudin's Cockatoo	<i>Calyptorhynchus baudinii</i>	CS1		x	x	x	Up to ten seen near Happy Valley north.
Galah	<i>Cacatua roseicapilla</i>		x				
Psittacidae (lorikeets and parrots)							
Purple-crowned Lorikeet	<i>Glossopsitta porphyrocephala</i>		x				
Regent Parrot	<i>Polytelis anthopeplus</i>						
Red-capped Parrot	<i>Purpureicephalus spurius</i>		x	x	x	x	Ones and twos seen in woodland daily.
Western Rosella	<i>Platycercus icterotis</i>		x	x	x		
Australian Ringneck	<i>Barnardius zonarius</i>		x	x	x	x	Seen in woodland daily.
Elegant Parrot	<i>Neophema elegans</i>				x	x	One or two birds heard in woodland daily.
Cuculidae (cuckoos)							
Pallid Cuckoo	<i>Cuculus pallidus</i>						

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Fan-tailed Cuckoo	<i>Cuculus pyrrhophanus</i>	x	x	
Horsfield's Bronze-Cuckoo	<i>Chrysococcyx basalis</i>	x		x Heard occasionally in woodland.
Shining Bronze-Cuckoo	<i>Chrysococcyx lucidus</i>	x	x	x Heard in woodland daily.
Strigidae (hawk-owls)				
Barking Owl (south-west sub-species)	<i>Ninox connivens connivens</i>			CS2
Southern Boobook Owl	<i>Ninox novaeseelandiae</i>	x	x	
Tytonidae (barn owls)				
Masked Owl (southern sub-species)				CS2
	<i>Tyto novaehollandiae novaehollandiae</i>			
Barn Owl	<i>Tyto alba</i>			
Podargidae (frogmouths)				
Tawny Frogmouth	<i>Podargus strigoides</i>	x	x	
Caprimulgidae (nightjars)				
Spotted Nightjar	<i>Eurostopodus argus</i>			
Aegothelidae (owlet-nightjars)				
Australian Owlet-nightjar	<i>Aegotheles cristatus</i>	x	x	
Apodidae (swifts)				

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Fork-tailed Swift	<i>Apus pacificus</i>	CS1						
Halcyonidae (forest kingfishers)								
Laughing Kookaburra	<i>Dacelo novaeguinea</i>	INT	x	x	x	x		Seen or heard in woodland daily.
Sacred Kingfisher	<i>Todiramphus sanctus</i>		x	x		x		Seen at Happy Valley north daily, possibly nesting.
Meropidae (bee-eaters)								
Rainbow Bee-eater	<i>Merops ornatus</i>	CS1	x	x		x		Seen in paddocks at western edge of site daily. Likely to be nesting.
Climacteridae (treecreepers)								
Rufous Treecreeper	<i>Climacteris rufus</i>							
Maluridae (fairy-wrens)								
Red-winged Fairy-wren	<i>Malurus elegans</i>					x		
Splendid Fairy-wren	<i>Malurus splendens</i>		x	x	x	x		Seen or heard in woodland daily.

Pardalotidae (pardalotes)						
Spotted Pardalote	<i>Pardalotus punctatus</i>	x		x	x	Seen or heard in woodland daily.
Striated Pardalote	<i>Pardalotus striatus</i>	x	x	x	x	Seen or heard in woodland daily. Most common bird on site.
White-browed Scrubwren	<i>Sericornis frontalis</i>	x	x	x	x	Heard occasionally in woodland.
Weebill	<i>Smicrornis brevirostris</i>	x	x	x	x	Seen or heard in woodland on most days.
Western Gerygone	<i>Gerygone fusca</i>	x	x	x	x	Seen or heard in woodland daily.
Inland Thornbill	<i>Acanthiza apicalis</i>	x	x	x	x	Seen or heard in woodland daily.
Western Thornbill	<i>Acanthiza inornata</i>	x	x	x	x	Seen or heard in woodland daily.
Yellow-rumped Thornbill	<i>Acanthiza chrysorrhoa</i>	x	x	x	x	Seen in paddocks at western edge of site daily. Occasionally in woodland.
Meliphagidae (honeyeaters)						
Red Wattlebird	<i>Anthochaera carunculata</i>	x	x	x	x	Seen or heard in woodland daily.
Western Wattlebird	<i>Anthochaera lunullata</i>					
Brown-headed Honeyeater	<i>Melithreptus brevirostris</i>					
White-naped Honeyeater	<i>Melithreptus lunatus</i>	x		x		
Brown Honeyeater	<i>Lichmera indistincta</i>	x	x	x	x	Heard occasionally in woodland.
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>	x		x		

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White-cheeked Honeyeater	<i>Phylidonyris nigra</i>						
Tawny-crowned Honeyeater	<i>Phylidonyris melanops</i>						
Western Spinebill	<i>Acanthorhynchus superciliosus</i>		x	x	x	x	Seen or heard in woodland daily.
Petroicidae (Australian robins)							
Scarlet Robin	<i>Petroica multicolor</i>		x		x	x	Seen or heard in woodland daily.
Western Yellow Robin	<i>Eopsaltria griseogularis</i>	CS3	x	x	x		
White-breasted Robin	<i>Eopsaltria georgiana</i>		x				
Neosittidae (sittellas)							
Varied Sittella	<i>Daphoenositta chrysoptera</i>		x		x	x	Seen occasionally in woodland.
Pachycephalidae (whistlers)							
Crested Shrike-tit	<i>Falcunculus frontatus</i>	CS2					
Golden Whistler	<i>Pachycephala pectoralis</i>		x		x	x	Seen or heard in woodland daily.
Rufous Whistler	<i>Pachycephala rufiventris</i>		x	x			
Grey Shrike-thrush	<i>Colluricincla harmonica</i>		x	x	x	x	Seen or heard in woodland daily.

Dicruridae (flycatchers)						
Magpie-lark	<i>Grallina cyanoleuca</i>	x				
Restless Flycatcher	<i>Myiagra inquieta</i>					
Grey Fantail	<i>Rhipidura fuliginosa</i>	x	x	x	x	Seen or heard in woodland daily.
Willie Wagtail	<i>Rhipidura leucophrys</i>	x		x	n	Seen occasionally in paddocks at western edge of site.
Campephagidae (cuckoo-shrikes)						
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	x		x	x	Seen or heard in woodland daily.
White-winged Triller	<i>Lalage sueurii</i>	x		x	x	Seen or heard occasionally in Banksia woodland.
Artamidae (woodswallows)						
Black-faced Woodswallow	<i>Artamus cinereus</i>	x		x	x	Seen in paddocks at western edge of site daily. Occasionally in woodland.
Dusky Woodswallow	<i>Artamus cyanopterus</i>	x		x		
Grey Butcherbird	<i>Cracticus torquatus</i>	x		x	x	Seen or heard in woodland daily.
Australian Magpie	<i>Gymnorhina tibicen</i>	x	x	x	x	Seen or heard in woodland daily.
Grey Currawong	<i>Strepera versicolor</i>	x	x	x	x	Seen or heard in woodland daily.
Corvidae (ravens and crows)						
Australian Raven	<i>Corvus coronoides</i>	x	x	x	x	Seen or heard in woodland daily.

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Motacillidae (pipits and true wagtails)					
Richard's Pipit	<i>Anthus novaeseelandiae</i>	x			
Passeridae (finches)					
Red-eared Firetail	<i>Stagonopleura oculata</i>	CS3			
Hirundinidae (swallows)					
Welcome Swallow	<i>Hirundo neoxena</i>	x			
Tree Martin	<i>Hirundo nigricans</i>	x	x		
Sylviidae (old world warblers)					
Clamorous Reed-Warbler	<i>Acrocephalus stentoreus</i>				
Little Grassbird	<i>Megalurus gramineus</i>				
Rufous Songlark	<i>Cincloramphus mathewsi</i>	x			
Zosteropidae (white-eyes)					
Silvereye	<i>Zosterops lateralis</i>	x	x	x	x Seen or heard in woodland daily.
Species richness		72	31	52	51

Table 4. Mammals that may occur in the vicinity of Happy Valley (from Bamford 2000) and those recorded during the surveys by Bamford (2000), Bamford and Wilcox (2004) and this study (September and November 2007). Status is described at end. 'x' indicates species recorded directly, 'd' indicates droppings, 'f' indicates foraging signs (e.g. diggings), 't' indicates tracks.

Species	Status	Bamford (2000)	Bamford and Wilcox (2004)	Sep 2007	Nov 2007	
Tachyglossidae (echidnas)						
Echidna	<i>Tachyglossus aculeatus</i>	x		f		
Dasyuridae						
Mardo	<i>Antechinus flavipes</i>	x			x	
Chuditch	<i>Dasyurus geoffroii</i>	CS1	x			
Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>	CS1	x		x	
Gilbert's Dunnart	<i>Sminthopsis gilberti</i>		x		x	
Peramelidae (bandicoots)						
Quenda (Southern Brown Bandicoot)	<i>Isodon obesulus</i>	CS2	x	x	f	x
Phalangeridae (possums)						
Brush-tailed Possum	<i>Trichosurus vulpecula</i>		x	x	d	d
Pseudocheiridae (ring-tailed possums)						
Western Ring-tailed Possum	<i>Pseudocheirus occidentalis</i>	CS1	x			
Burramyidae (pygmy possums)						
Western Pygmy Possum	<i>Cercartetus concinnus</i>		x		x	
Tarsipedidae (honey possum)						
Honey Possum	<i>Tarsipes rostratus</i>		x			
Macropodidae (kangaroos and wallabies)						
Western Grey Kangaroo	<i>Macropus fuliginosus</i>		x	x	x	x
Brush or Black-gloved Wallaby	<i>Macropus irma</i>	CS2	x	x	x	x

Species	Status	Bamford (2000)	Bamford and Wilcox (2004)	Sep 2007	Nov 2007
Mollosidae (mastiff bats)					
White-striped Bat	<i>Tadarida australis</i>	x			
<i>Mormopterus</i> sp. (<i>M. planiceps</i> , long penis form). Listed as 'Species 4, population O' by Adams <i>et al.</i> (1988)	CS3				
Western Freetail-bat					
Vespertilionidae (vesper bats)					
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>				
Chocolate Wattled Bat	<i>Chalinolobus morio</i>				
	<i>Vespedalus regulus</i>	?x			
	<i>Falsistrellus mackenziei</i>	CS2			
Lesser Long-eared Bat	<i>Nyctophilus geoffroyi</i>				
Gould's Long-eared Bat	<i>Nyctophilus gouldii</i>				
Greater Long-eared Bat	<i>Nyctophilus timoriensis</i>				
Muridae (rats and mice)					
Rakali or Water Rat	<i>Hydromys chrysogaster</i>	CS2			
House Mouse	<i>Mus musculus</i>	INT	x		
Moodit or Southern Bush Rat	<i>Rattus fuscipes</i>				
Black Rat	<i>Rattus rattus</i>	INT	x		
Leporidae (rabbits and hares)					
Rabbit	<i>Oryctolagus cuniculus</i>	INT	x	x	x
Canidae (foxes and dogs)					
European Red Fox	<i>Vulpes vulpes</i>	INT	x	t	x
Felidae (cats)					

Species		Status	Bamford (2000)	Bamford and Wilcox (2004)	Sep 2007	Nov 2007
Feral Cat	<i>Felis catus</i>	INT				
Suidae (pigs)						
Feral Pig	<i>Sus scrofa</i>	INT	x		f	
Species richness			19	4	8	10

CONSERVATION STATUS

The conservation status of fauna species is assessed under Commonwealth and State Acts such as the Commonwealth *Environment Protection and Biodiversity Conservation Act* (EPBC Act) 1999 and the Western Australian *Wildlife Conservation Act 1950*. The significance levels for fauna used in the EPBC Act are those recommended by the International Union for the Conservation of Nature and Natural Resources (IUCN 2001). The WA *Wildlife Conservation Act 1950* uses a set of Schedules but also classifies species using some of the IUCN categories. These categories and Schedules are described in Appendix 1.

The EPBC Act also has lists of migratory species that are recognised under international treaties such as the China Australia Migratory Bird Agreement (CAMBA), the Japan Australia Migratory Bird Agreement (JAMBA) and the Bonn Convention (The Convention on the Conservation of Migratory Species of Wild Animals). The list of migratory species under the EPBC Act has been revised to include species only, thus excluding family listings (DEWR, pers. comm.). Those species listed in JAMBA are also protected under Schedule 3 of the WA *Wildlife Conservation Act*. There is a separate list of marine species under the EPBC Act, but this only applies to land and waters under Commonwealth management. Therefore, marine listings are not included in this report.

The Department of the Environment and Water Resources (DEWR, formerly the Department of the Environment and Heritage, Environment Australia) has also supported the publication of reports on the conservation status of most vertebrate fauna species: reptiles (Cogger et al. 1993), birds (Garnett and Crowley 2000), monotremes and marsupials (Maxwell et al. 1996), rodents (Lee 1995) and bats (Duncan et al. 1999). The Threatened Species and Communities Section of DEWR produced a list of Threatened Australian Fauna, although this list is effectively a precursor to the list produced under the EPBC Act. These publications also use the IUCN categories, although those used by Cogger et al. (1993) differ in some respects because this report pre-dates categories reviewed by Mace and Stuart (1994) and revisited since by IUCN (2001).

In Western Australia, the Department of Environment and Conservation (DEC) has produced a supplementary list of Priority Fauna, being species that are not considered Threatened under the WA Act but for which the Department feels there is cause for concern. Some Priority species, however,

are also assigned to the IUCN Conservation Dependent category. Assessments in this report are based on the most recent version of the DEC priority list (January 2008).

Fauna species included under conservation acts and/or agreements are formally recognised as of conservation significance under state or federal legislation. Species listed only as Priority by DEC, or that are included in publications such as Garnett and Crowley (2000) and Cogger et al. (1993), but not in State or Commonwealth Acts, are also of recognised conservation significance. In addition, species that are at the limit of their distribution, those that have a very restricted range and those that occur in breeding colonies, such as some waterbirds, can be considered of conservation significance, although this level of significance has no legislative or published recognition and is based on interpretation of distribution information. The WA Department of Environment (now part of the DEC) used this sort of interpretation to identify significant bird species in the Perth metropolitan area as part of Perth Bushplan (DEP 2000).

On the basis of the above comments, three levels of conservation significance are recognised in this report:

- Conservation Significance (CS) 1: Species listed under State or Commonwealth Acts.
- Conservation Significance (CS) 2: Species not listed under State or Commonwealth Acts, but listed in publications on threatened fauna or as Priority species by DEC.
- Conservation Significance (CS) 3: Species not listed under Acts or in publications, but considered of at least local significance because of their pattern of distribution. This level may have links to preserving biodiversity at the genetic level (EPA Position Statement No. 3, EPA 2002). For example, if a population is isolated but a subset of a widespread (common) species, then it may not be recognised as threatened, but may have unique genetic characteristics. Species on the edge of their range, or that are sensitive to impacts such as habitat fragmentation, may also be classed as CS3.

In addition to these statuses, species that have been introduced (INT) are also indicated.