

SPECIES	DESCRIPTION OF THREAT	ACTIONS
<p>Forest Red-tailed Black Cockatoo (<i>Calyptorhynchus banksii naso</i>)</p>	<p>Status: Listed as rare or likely to become extinct under WA <i>Wildlife Conservation Act 1950</i>. Listed as vulnerable under EPBC Act 1999.</p> <p>1) DEC (now DPaW) 2004: “Summary of reason for increased official level of extinction: Loss of mature nesting trees due to logging/woodchipping and competition with feral bees. “Management needs and implications: retain mature and over-mature marri trees for nest and food source as part of forest management prescriptions. “Summary Status Assessment: ...critical nesting and food resources are continuing to decline due to logging... Strong association with very old and large marri trees may exacerbate decline.”</p> <p>CONCLUSION: The official level of threat was increased as a result of this nomination by DEC, but the destruction of vital breeding and feeding habitat during logging operations continues.</p> <p>2) <u>Recovery Plan 2008:</u> “7.3 Habitat Loss: ...Selective removal of Marri for timber, mining, wood-chipping and agriculture has resulted in further declines... The impacts of previous forest management practices for timber and wood chipping on Forest Black Cockatoo populations have not yet been quantified. However, forestry practices such as clearfelling and 80-year rotations may restrict the availability of nest hollows. 7.4 Nest hollow shortage: The number of nest sites available may be limiting... Both Baudin’s Cockatoo and the Forest Red-tailed Black Cockatoo nest in the hollows of large trees... Hollows suitable for use by these two Forest Black Cockatoo species are scarce... Analyses have shown that trees with hollows large enough for use by Forest Black Cockatoos may be between 200 and 500 years old.”</p> <p>3) <u>Johnstone et al 2013, 154</u> “The combined threats of habitat destruction/ fragmentation, competition with introduced species and a drying climate are believed responsible for FRTBC disappearing from about 30% of its original range and declining markedly in numbers over the past half century (Chapman 2008; Garnett et al. 2011). “Given the limited availability of large Marri throughout the range of FRTBC (Johnstone et al. in press), the species may be at greater risk than originally thought.”</p>	<p>Despite logging being the major current threat to the survival of this iconic, unique, culturally significant and threatened species, FPC continues to destroy nesting hollows and food supplies contrary to DPaW and independent scientific advice.</p> <p>DPaW does not require FPC to protect habitat for threatened species.</p> <p>The <i>Wildlife Conservation Act WA (1950)</i> does not provide for the protection of threatened species or their habitats.</p> <p>Recovery plan 2007-2016 in place.</p>

<p>Baudin's Black Cockatoo (<i>Calyptorhynchus baudinii</i>)</p>	<p>Status: Listed as Endangered under WA <i>Wildlife Conservation Act 1950</i>. Listed as Endangered under EPBC Act 1999.</p> <p>1) <u>Birdlife International 2013</u>. "Threats: Nest hollow shortage is considered the principal threat, as suitable hollows are considered scarce, only forming in trees at least 130 to 220 years of age, many of which have been preferentially felled (Chapman 2007). The past and present impacts of logging for marri, initially for woodchips and now for furniture grade sawlogs, are reducing the availability of food and nesting trees. The impact of logging and woodchipping has not been quantified. Although logging of old growth forest in the south-west has now stopped, habitat loss is still likely to be causing population declines.</p> <p>Ecology: Damage to commercial fruit crops is thought to be higher during local or seasonal shortages of marri seeds, and could be related to destruction of this habitat (DEC, Western Australia 2007a)."</p>	<p>FPC continues to destroy nesting hollows and food supplies by felling, burning and intentionally poisoning critical nesting trees and their supporting ecosystems during logging, post logging and fuel reduction prescribed burns.</p> <p>Recovery plan 2007-2016 in place</p>
<p>Carnaby's Black Cockatoo (<i>Calyptorhynchus latirostris</i>)</p>	<p>Status: Listed as Endangered under WA <i>Wildlife Conservation Act 1950</i>. Listed as Endangered under EPBC Act 1999.</p> <p>1) <u>Birdlife Australia 2013</u>. "Their survival depends on overcoming various different factors — the loss of nesting and feeding habitat, competition for nesting hollows, illegal shooting and poisoning, being hit by cars and trucks, climate change... the list goes on and on, but across the Wheatbelt and Great Southern regions, the loss of feeding habitat near their nesting sites is the greatest risk, at least in the short term."</p>	<p>As for Red-tailed and Carnaby's Cockatoos.</p> <p>Recovery plan 2012 in place.</p>
<p>Crested Shrike Tit (<i>Falcunculus leucogaster</i>)</p>	<p>Very limited information and no recovery plan in place.</p> <p>1) <u>CSIRO 2004</u>. "The western form has declined primarily due to habitat loss, particularly clearing of habitat for agriculture."</p>	<p>Very limited understanding of this species.</p> <p>No recovery plan in place.</p>
<p>Malleefowl (<i>Leipoa ocellata</i>)</p>	<p>Status: Listed as rare or likely to become extinct under WA <i>Wildlife Conservation Act 1950</i> Listed as vulnerable under EPBC Act</p> <p>1) <u>National Recovery Plan 2007</u>. "The degree of fragmentation of the remaining Malleefowl habitat is of particular concern and presents a major limiting factor to halting and reversing the decline of the species."</p>	<p>Limited information about Malleefowl in karri forests. DPaW lists the species as one that requires "additional management actions in relation to timber harvesting operations." (DEC SFM report on the Phascogale 2008, 5).</p> <p>No on-ground fauna surveys are done to locate Mallee Fowl and ensure their protection.</p>

		National recovery plan 2007 in place.
Muir's Corella (<i>Cacatua pastinator pastinator</i>)	<p>Status: Listed as vulnerable under EPBC Act 1999.</p> <p>1) <u>Australian Government Department of the Environment 2013.</u> "Threats: The loss of habitat has reduced the availability of hollow-bearing trees that are used for nesting and, although there appears to be an adequate number of potential nest sites at present, the availability of hollow-bearing trees is continuing to decline, and this could limit the population size of Muir's Corella (southern) in the future (Massam & Long 1992; Mawson & Long 1994)."</p> <p>Recovery Plan: "In addition, as the logging industry in south-west forests declines, the farm land on which Muir's Corella occurs is now being converted to Blue Gum <i>Eucalyptus globulus</i> plantations (Garnett and Crowley 2000). Broad-scale clearing for plantations results in the loss of nest hollows and related land management practices can also limit the availability of food (Garnett and Crowley 2000). Clearing of nest trees for agriculture and hardwood plantations has caused a decline in the availability of nest hollows for Muir's Corella (Smith 1991; Mawson and Long 1994)."</p>	<p>The ongoing destruction of hollow bearing and potential hollow bearing trees is a major threat to this species.</p> <p>Recovery plan 2008 in place.</p>
Western False Pipistrelle (<i>Falsistrellus mackenziei</i>)	<p>1) <u>Australian Government Department of the Environment 2013.</u> "Habitat: It occurs in wet sclerophyll forest dominated by Karri (<i>Eucalyptus diversicolor</i>), and in the high rainfall zones of the Jarrah (<i>E. marginata</i>) and Tuart (<i>E. gomphocephala</i>) forests.</p> <p>Current threats: Stands of mature, pre-senescent Karri and Jarrah forest are still subject to logging.</p> <p>Recommended actions:</p> <ul style="list-style-type: none"> • Conduct field survey to establish status. • Monitor presence/absence at selected sites across range. • Locate and characterise roost sites, determine conservation implications of sexual segregation in roosting and foraging. • Protect roosts from disturbance." 	No recovery plan in place.

<p>Western Ringtail Possum (<i>Pseudocheirus occidentalis</i>)</p>	<p>Status: Listed as rare or likely to become extinct under WA <i>Wildlife Conservation Act 1950</i>. Listed as vulnerable under EPBC Act 1999.</p> <p>1) <u>Australian Government Department of the Environment 2013</u>. “Timber harvesting and burning operations can also threaten Western Ringtail Possum populations: such actions result in loss of habitat, habitat fragmentation, loss of nest trees and refuges, loss of canopy, and population displacement. This has been an issue within the Manjimup populations in particular and in the Dardanup Shire (DEC 2007; de Tores et al. 2004; Wayne et al. 2000).</p> <p>To understand the impacts of logging within the Jarrah forests, an experimental study was conducted in Kingston Block, 25 km north-east of Manjimup (Burrows et al. 1993). The results indicated a severe decline in Western Ringtail Possums, with 12 of the 17 radio collared Western Ringtail Possums <u>all dead within 20 months of logging</u> (Burrows et al. 2002). These results were consistent with a later study by Wayne and colleagues (2006), who found that the abundance of Western Ringtail Possums was greater in predominantly unlogged forests, and in forests which were logged in the 1960s when logging practices were historically less intense.</p> <p>As felling operations in Jarrah forests have increased, this has led to increased debris and ground fuel, which has in turn resulted in more severe fires over greater areas. This observation is supported by Wayne and colleagues (2006) research into the Perup forest, which is situated at the less productive margin of the Jarrah forest, and was not logged until late in the 20th century (Wardell-Johnson et al. 2004). By this reasoning, Perup suffered less from the impacts of fire, which has been an important factor in it retaining its diverse marsupial assemblage (Wardell-Johnson et al. 2004).”</p>	<p>Logging kills Western Ringtail Possums outright. The increased predation by foxes and cats and the post logging burns kill the survivors.</p> <p>FPC continues to log in the animals’ remaining habitat.</p> <p>Interim recovery plan 1997—1999 dated 1998 in place.</p>
<p>Brush-tailed Phascogale (<i>Phascogale tapoatafa</i>)</p>	<p>Status: Listed as rare or likely to become extinct under WA <i>Wildlife Conservation Act 1950</i>.</p> <p>1) <u>DEC 2008</u>. “Habitat: The Brush - tailed Phascogale has an arboreal foraging habit and a preference for mature trees for nesting hollows; although the potential of smaller trees to provide nesting hollows should not be overlooked (Abbott and Whitford (2002). Threats: loss of tree hollows due to timber harvesting, mining, dieback disease and competition from feral bees...”</p> <p><u>DEC 2012</u>: “Habitat clearing, fragmentation, and alteration by logging and mining are the greatest</p>	<p>Since the Kingston Study, which found that logging has severe impacts on Phascogales and Western Ring-tail Possums, the number of habitat trees retained per hectare has been increased. The increase is insufficient for arboreal mammals that are vulnerable to predation when travelling along the ground, and for the full</p>

	threats to Brush-tailed Phascogales as they reduce availability of trees with hollows, and subsequently increase susceptibility to predation by foxes and cats. Residual habitat is often fragmented, thereby isolating populations and impeding genetic exchange.”	suite of hollow dependent fauna that are already competing for scarce resources.
Quenda (Southern Brown Bandicoot) (<i>Isoodon obesulus</i>)	Status: Not listed under WA <i>Wildlife Conservation Act 1950</i> . 1) Perth Zoo 2012. Threats: The main threat to Quenda is habitat loss, but foxes and cats are also responsible for reducing numbers. Clearing, introduced weeds and trampling by livestock have forced Quendas into small patches of habitat that are unable to support larger population.”	Quenda habitat continues to be logged. No recovery plan in place.
Chuditch (<i>Dasyurus geoffroii</i>)	Status: Listed as rare or likely to become extinct under WA <i>Wildlife Conservation Act 1950</i> . Listed as vulnerable under EPBC Act 1999. 1) Australian Government Department of the Environment 2013. Threats: Being a top-order predator, the fate of the Chuditch is tied to the abundance of its prey and the health of the ecosystem. Many factors affect the abundance of prey and ecosystem health, including weather or climatic conditions, disease and habitat destruction. Land clearing or removal of suitable den logs can limit the ability of the Chuditch to move through the landscape and therefore restrict the area of suitable habitat available to the Chuditch (Morris et al. 2003).”	The recovery plan for this species was updated in July 2012.
Quokka (<i>Setonix brachyurus</i>)	Status: Listed as rare or likely to become extinct under WA <i>Wildlife Conservation Act 1950</i> . Listed as vulnerable under EPBC Act 1999. 1) DEC Recovery Plan 2013: “The most obvious change in the environment over this time has been the loss of habitat. This loss has been mainly due to frequent high intensity fires, changes in fire regimes (see Burrows et al. 1995), timber harvesting and urban development. The removal of vegetation from areas inhabited by quokkas and next to their habitat is likely to contribute to localised declines. With around 60 per cent of quokka records within SF or timber reserves, timber harvesting and associated infrastructure clearing may be a significant threat. Most habitat occurrences in SF are within the creek zones, which are accorded “informal reserve” status during harvesting operations. Effects from clearing may be direct, that is, because of mortalities from the physical process of clearing and associated activities (such as road kill from the creation of roads and increased	The Mainland Quokka has been included in the list of species likely to require “additional management actions in relation to timber harvesting operations” (DEC SFM report on the Phascogale 2008, 5). FPC has made cursory attempts to locate informal reserves in such a way as to allow for Quokkas to persist after logging operations. Given the fact that logging not only clears and fragments habitat, but also exacerbates predation, removes critical food supplies,

	<p>traffic), or indirect through the removal of habitat, or removal of components of the preferred habitat mosaic. These may force dispersal to or through unsuitable habitat. Indirect effects also include an increased predation risk by opening up pathways along which feral predators may gain access to previously impenetrable habitat.”</p> <p>2) <u>Australian Government Department of the Environment 2013</u>. “Clearing of dense vegetation has contributed to the Quokka's decline because it progressively fragments the habitat. This increases the distance between suitable swamp habitats, increasing exposure to predators. Habitat clearing is attributable to agricultural developments (grazing and cropping), urbanisation, and logging. It has been noted that approximately 60% of Quokka records are within state forests or timber reserves, which are likely to be harvested in the future (DEC 2013).”</p> <p>3) <u>Draft Recovery Plan 2010</u>. “There is also a recognised potential for prescribed burns to be of a higher than intended intensity, often due to high temperatures and the presence of logging debris, thus resulting in these riparian zones being completely burnt. Consequently, broad scale burning may not always lead to the desired mosaic of habitat patches. “Timber harvesting and associated activities (<i>e.g.</i> roading, silvicultural burns, etc), high intensity and/or high frequency fires, predation from introduced predators, changes to drainage patterns, habitat modification from feral pigs and spread of dieback (<i>Phytophthora cinnamomi</i>) have the potential to pose significant threats to quokka populations (de Tores <i>et al.</i>, 2007).”</p>	<p>separates individuals and populations and increases the fire risk to Quokkas, these changes are not sufficient to protect this threatened, endemic species.</p>
<p>Balston’s Pygmy Perch (<i>Nannatherina balstoni</i>)</p>	<p>Status: Listed as rare or likely to become extinct under WA <i>Wildlife Conservation Act 1950</i>.</p> <p>1) <u>Australian Government Department of the Environment</u>. “Distribution: Balston's Pygmy Perch has been lost from the northern half of its range, including the Moore River (Morgan <i>et al.</i> 2000), and is extremely rare or lost from many other rivers of the south-west including Blackwood River, Frankland River, Margaret River and King River (Morgan <i>et al.</i> 2002). It is also likely that the species has been lost from rivers and also in many lakes on the Swan Coastal Plain south of Perth, although historical records are largely absent from the region. It is now regarded as the rarest of all the endemic freshwater fishes of south-west Australia (Morgan <i>et al.</i> 1995). Habitat degradation: Habitat degradation is likely to have occurred through the construction of water points for fire fighting, road maintenance, mineral sand exploration and mining, groundwater extraction, and agricultural and forestry practices in the upper</p>	<p>Logging is currently occurring within 200m of the Deep River – the cleanest river in WA and habitat to the salt sensitive Balston’s Pygmy Perch. The logging is occurring in a priority one, high salt risk catchment.</p> <p>No recovery plan in place.</p>

	<p>areas of catchments, leading to changes to river inflow, salinisation, siltation and eutrophication (Morgan et al. 1996).</p> <p>Salinity: Salinisation is a primary cause of Balston's Pygmy Perch habitat contraction."</p>	
<p>Western Mud Minnow (<i>Galaxiella munda</i>)</p>	<p>Status: Listed as rare or likely to become extinct under WA <i>Wildlife Conservation Act 1950</i>.</p> <p>Very limited information available</p>	<p>No recovery plan in place.</p>
<p>Water Rat (<i>Hydromys chrysogaster</i>)</p>	<p>Status: Not listed under WA <i>Wildlife Conservation Act 1950</i>.</p> <p>1) Perth Zoo: "Water Rats are an important indicator of aquatic ecosystem health. Drought and habitat degradation are threats to their continued survival. They were heavily hunted for their pelts in the 1930s and 1940s until they became a protected species." 2) Australian Museum 2009. "The main threats to the Water-rat today are habitat alteration as a result of flood mitigation and swamp drainage, and predation by introduced animals such as cats and foxes."</p>	<p>No recovery plan in place.</p>