

**The ability to conserve a threatened species begins when they are named!  
New species of Rock Wallaby  
(Marsupialia: Macropodidae: *Petrogale*) from northern Australia.**

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**ABSTRACT**

Numerous studies have been conducted into the phylogeny of Australia's Rock Wallaby species within the widespread genus *Petrogale* Gray, 1837.

In spite of these studies, well-known forms remain unnamed and therefore potentially under the radar of State and Federal wildlife conservation authorities, increasing their potential risk of decline or extinction.

To rectify this situation, and in accordance with the rules of the *International Code of Zoological Nomenclature*, two highly divergent forms are formally named herein as species and two other populations as subspecies.

Formally named for the first time are *Petrogale martinekae* sp. nov. from the west Kimberley in Western Australia, previously regarded as a southern population of the distinctive species known as the Warabi, *P. burbidgei* Kitchener and Sanson, 1978.

Also formally named is *Petrogale hoserae* sp. nov. from the southern edge of the Gulf of Carpentaria, until now treated as a divergent population of the Eastern Short-eared Rock Wallaby *P. wilkinsi* Thomas, 1926.

Two genetically and morphologically distinct east Kimberley populations of the Short-eared rock-wallaby *P. brachyotis* (Gould, 1841) are formally named as subspecies, being *P. brachyotis pentecostensis* subsp. nov. and *P. brachyotis ordensis* subsp. nov..

The formal naming of these taxa now enables wildlife departments to formulate conservation plans for extant populations and reduces the risk of their extinctions arising from them being treated as one and the same as otherwise more widespread and abundant species.

This paper also formally divides the genus into four subgenera based on known divergences of each major species group. Two subgenera are formally named for the first time.

**Keywords:** Taxonomy; nomenclature; classification; Wallaby; Marsupials; Rock Wallaby; northern Australia; Australia; Western Australia; Northern Territory; Queensland; Macropodidae; *Petrogale*; *burbidgei*; *brachyotis*; *wilkinsi*; *persephone*; *xanthopus*; *celeris*; new subgenus; *Quasipetrogale*; *Ferepetrogale*; new species; *hoserae*; *martinekae*; new subspecies; *pentecostensis*; *ordensis*.

**INTRODUCTION**

Rock Wallabies of the genus *Petrogale* Gray, 1837 are widespread and common in most parts of Australia.

Numerous studies have been conducted into the phylogeny of *Petrogale* Gray, 1837, including those cited in the materials and methods section of this paper.

In spite of these studies, well-known and previously identified divergent forms remain unnamed and therefore potentially under the radar of State and Federal wildlife conservation authorities,

increasing their potential risk of decline or extinction.

To rectify this situation, and in accordance with the rules of the *International Code of Zoological Nomenclature*, the genus was reviewed and as a result two highly divergent forms were identified as potentially unnamed species as were a number of populations divergent at the subspecies level.

As this paper was being prepared, some of these forms were in fact formally named (Eldridge and Potter, 2020), which necessitated removal of two subspecies descriptions from this

paper in the pre-publication process.

Remaining were at least two other putative species and two potential subspecies.

The relevant candidate taxa were examined in terms of their existing classification and also in terms of the published literature, phylogenies, divergences and available names in terms of *the International Code of Zoological Nomenclature* (Ride *et al.* 1999), before the final decision was made to publish this paper.

Formally identified as new taxa worthy of being named and named for the first time are *Petrogale martinekae sp. nov.* from the west Kimberley in Western Australia, formerly regarded as a southern population of the distinctive species known as the Warabi, *P. burbidgei* Kitchener and Sanson, 1978. Also formally named is *Petrogale hoseerae sp. nov.* from the southern edge of the Gulf of Carpentaria, until now treated as a divergent population of the Eastern Short-eared Rock Wallaby *P. wilkinsi* Thomas, 1926.

Two genetically and morphologically distinct east Kimberley populations of Short-eared rock-wallaby *P. brachyotis* (Gould, 1841) are formally named as subspecies, being *P. brachyotis pentecostensis subsp. nov.* and *P. brachyotis ordensis subsp. nov.*

The formal naming of these species now enables wildlife departments to formulate conservation plans for extant populations of these taxa and reduces the risk of their extinctions arising from them being treated as one and the same as otherwise more widespread and abundant species.

At the genus level, *Petrogale* has long been known to consist of three (according to most authors) or four (according to Potter *et al.* 2012) main species groups.

However use of subgeneric classification has been rarely used for these groups within *Petrogale*.

This remains the case, even though Potter *et al.* (2012), showed subgenus-level divergences for four main clusters of species. The name *Peradorcas* Thomas, 1904 with the type species *P. concinna* Gould, 1842, is available for the so-called *P. brachyotis* (Gould, 1841) species group. No names are available for the other two divergent lineages and they are herein formally named for the first time.

#### MATERIALS, METHODS AND RESULTS

Before a decision is made to name any new taxon, reasonable steps must be taken to ensure that it is justified on all relevant grounds, including that it is morphologically, genetically and reproductively isolated from their nearest relative and to a sufficient degree to be of taxonomic significance.

A further relevant question to ask is should the reproductively isolated and morphologically divergent entities be labelled as subspecies, full species, or potentially higher level again.

Key literature relevant to the taxonomic and nomenclatural conclusions within this paper include Bannister *et al.* (1988), Bee and Close (1993), Browning *et al.* (2001), Bryant and Krosch (2016), Burbidge and Manly (2002), Burbidge and McKenzie (1978, 1989), Collins (1973), Clancy and Close (1997), Eldridge (1997), Eldridge and Close (1992, 1993, 1997), Eldridge and Potter (2020), Eldridge *et al.* (1992a, 1992b, 2001, 2012), Flannery and Archer (1984), Flannery *et al.* (1992), Gibson and McKenzie (2012), Goodfellow (1993), Gould (1841, 1842), Gray (1837), Groves *et al.* (2005), Hoser (1991), Iredale and Troughton (1934), Kitchener and Sanson (1978), Lawlor (1979), Le Souef (1924), Maynes (1982), Maxwell *et al.* (1996), Menkhorst (2001), Meredith *et al.* (2008), Pearson (2012), Potter *et al.* (2012a, 2012b, 2012c, 2014), Ride (1970), Ride *et al.* (1999), Roache (2011), Sharman *et al.* (1990), Shuker and Durrell (1993), Spencer (1991), Start *et al.* (2012), Strahan (1988), Telfer and Eldridge (2010), Thomas (1888, 1904a, 1904b, 1909, 1922, 1926a, 1926b), Vaughan (1986) and sources cited therein (duplicitous references not necessarily included).

Live and dead specimens as well as available bone specimens, were examined as was other necessary material, including past climate data for the relevant regions, sea level depths, and other relevant information.

In summary, as inferred already, the genetic, geological, historical and morphological evidence clearly showed that there were two obviously unnamed species of Rock Wallaby in the *P. brachyotis* (Gould, 1841) species group.

The south western Kimberley Ranges population of the distinctive species known as the Warabi, *P. burbidgei* Kitchener and Sanson, 1978 was sufficiently divergent from the type form from the Mitchell Plateau to warrant being recognized as a full species. It is herein formally named *Petrogale martinekae sp. nov.* with a known distribution from the Prince Regent River in the north to the Munboon Plateau in the south (the type locality).

A very divergent population of the Eastern Short-eared Rock Wallaby *P. wilkinsi* Thomas, 1926 from the southern shores of the Gulf of Carpentaria was also found to be sufficiently divergent from that taxon with a type locality of the top end of the Northern Territory, to warrant being identified and named as a new species.

It is formally named as *Petrogale hoseerae sp. nov.*

Two genetically and morphologically distinct east Kimberley populations of Short-eared rock-wallaby *P. brachyotis* (Gould, 1841) as identified by Potter *et al.* (2014) are herein formally named as subspecies.

These are *P. brachyotis pentecostensis subsp. nov.* and *P. brachyotis ordensis subsp. nov.* named in reflection of the known centres of distribution for each subspecies. Potter *et al.* (2014) identified each population as EK1 ESU and EK2 ESU.

Both are potentially threatened due to their relatively limited known distributions and ongoing risk of decline from introduced species such as foxes, cats (in particular) (see Spencer 1991), dogs or direct human intervention in other ways.

Significantly, the four newly named taxa have all diverged across known biogeographical barriers that have resulted in numerous species of reptile being discovered and formally named in recent years, having been separated from their nearest relatives across exactly the same barriers.

Examples can be seen in the new species descriptions within Hoser (2014, 2015, 2016, 2017, 2018a, 2018b, 2018c, 2018d).

As mentioned in the abstract the formal naming of these species now enables wildlife departments to formulate conservation plans for extant populations of these taxa and reduces the risk of their extinctions arising from them being treated as one and the same as otherwise more widespread and abundant species as has previously occurred (see Hoser 2019a, 2019b).

The genus *Petrogale* has long been recognized as consisting four morphologically distinct groups potentially worthy of subgeneric ranking or potentially even genus-level division (Thomas 1909). Perhaps due to the presence of the pre-existing synonym for the second main group of species, no recent publishing authors since Thomas (1904) have utilized subgenus-level classifications for the genus.

The *P. penicillata* (Gray, 1825) group is the type group for the genus and so would be the nominate subgenus if the genus were to be divided.

The name *Peradorcas* Thomas, 1904 is available for the *P. concinna* Gould, 1842 species group, better-known to most people as the *P. brachyotis* (Gould, 1841) species group (see below).

The molecular phylogeny published by Potter *et al.* (2012) at Fig. 5 showed subgenus level divergences within *Petrogale* for four species groups. These were for the two groups mentioned above as well as two other divergent lineages for two other divergent species, namely *P. xanthopus* Gray, 1855 and *P. persophone* Maynes, 1982.

Potter *et al.* (2012) wrote: "Four distinct lineages were identified,

(1) the *brachyotis* group, (2) *Petrogale persephone*, (3) *Petrogale xanthopus* and (4) the *lateralis-penicillata* group.”

Therefore this paper also formally divides the genus *Petrogale* into four subgenera based on known divergences of each major species group. Two subgenera are formally named for the first time, namely *Quasipetrogale subgen. nov.* and *Ferepetrogale subgen. nov.*

Potter *et al.* (2012) showed a divergence of about 8 MYA from other species for each of these subgenus-level groups, which was broadly in line with the marginally more divergent subgenus *Peradorcas*.

#### INFORMATION RELEVANT TO THE FORMAL DESCRIPTIONS THAT FOLLOW

There is no conflict of interest in terms of this paper or the conclusions arrived at herein.

Several people including anonymous peer reviewers who revised the manuscript prior to publication are also thanked as are relevant staff at museums who made specimens and records available in line with international obligations.

In terms of the following formal descriptions, spellings should not be altered in any way for any purpose unless expressly and exclusively called for by the rules governing Zoological Nomenclature as administered by the International Commission of Zoological Nomenclature.

In the unlikely event two or more newly named taxa are deemed conspecific by a first reviser, then the name to be used and retained is that which first appears in this paper by way of page priority and as listed in the abstract keywords.

Some material in descriptions for taxa may be repeated for other taxa in this paper and this is necessary to ensure each fully complies with the provisions of the *International Code of Zoological Nomenclature* (Fourth edition) (Ride *et al.* 1999) as amended online since.

Material downloaded from the internet and cited anywhere in this paper as being sourced online was downloaded and checked most recently as of 10 March 2020 (including if also viewed prior), unless otherwise stated and was accurate in terms of the content (as described) cited herein as of that date.

Unless otherwise stated explicitly, colour and other descriptions apply to living adult specimens of generally good health and not under any form of stress by means such as excessive cool, heat, dehydration or abnormal skin reaction to chemical or other input. Colour descriptions of species refer to fur, not skin.

While numerous texts and references were consulted prior to publication of this paper, the criteria used to separate the relevant species or subspecies has already been spelt out and/or is done so within each formal description and does not rely on material within publications not explicitly cited herein.

#### QUASIPETROGALE SUBGEN. NOV.

**LSID urn:lsid:zoobank.org:act:7780E296-D22F-4D39-83E3-73E8CC8C9B25**

**Type Species:** *Petrogale persephone* Maynes, 1982.

**Diagnosis:** The single species within the subgenus *Quasipetrogale subgen. nov.* is readily separated from all other species (and subgenera within the genus *Petrogale* Gray, 1837) by the following unique combination of characters: ears with brownish-orange hair outside and black internally. White to pale yellowish-white or pale whitish-grey lateral stripe on upper lip, passing below eye to about level of ear with platinum or pearl grey below which arises at the corner of the mouth and passes back to the ear region. Shoulders raw sienna passing to dark brown in axillary region with rest of the dorsal surface light brown, lightly pencilled with white hairs. Chin is white and throat varies from white to off-white, chest and venter light yellow to creamy yellow. Toes of fore and hind limbs and about half of hind feet are black. Recently moulted specimens may be greyish rather than brownish in overall pelage. The species presents as a generally dark animal, made such by the overall colour combined with the black feet and black dorsal surface of the tail.

The tail also terminates in a white to yellowish-white tip 15-20 mm in length (in adults). Head and body length (in adults) is 52-64 cm, tail length (in adults) 60-68 cm and weight (in adults) is 5-8 kg with males on average 60% heavier than females (adapted from Strahan 1988).

The genus *Petrogale* is diagnosed and defined in Thomas (1888) at pages 62-64.

**Distribution:** Living specimens are known only from a small area in Conway National Park, Dryander National Park, Gloucester Island National Park and around the town of Airlie Beach, all in Whitsunday Shire in Queensland, Australia.

**Etymology:** *Quasi* means “apparently but not really; seemingly.” which fits in line with the similarity of this species and subgenus to the type species in the genus *Petrogale* Gray, 1837.

**Content:** *Petrogale (Quasipetrogale) persephone* Maynes, 1982 (monotypic).

#### FEREPETROGALE SUBGEN. NOV.

**LSID urn:lsid:zoobank.org:act:D1643CB0-3FD6-415F-89CD-A5F1129B7838**

**Type Species:** *Petrogale xanthopus* Gray, 1855.

**Diagnosis:** The two morphologically similar species within the subgenus *Ferepetrogale subgen. nov.* are readily separated from all other species (and subgenera within the genus *Petrogale* Gray, 1837) by the following unique combination of characters: Tail is annulated with brown and pale yellow being the only two species in the genus *Petrogale* with this character. There is a dark nuchal stripe present. Ears are uniform yellow from behind. Skull length (in adults) is more than 9 cm long, the muzzle is broad, its sides and the interorbital region inflated. Greatest breadth of nasals is about one third of their length. There is a rich brown mid-dorsal stripe running from the crown of the head to the centre of the back, a distinct white cheek mark; brick-red patch running narrowly from the upper arm and onto the elbows and forearms, at which stage it effectively encircles the limb and there is also a buffy white side stripe followed by a brown hip stripe (modified from Thomas 1888, Strahan 1988).

**Distribution:** Found around the Southern Gulfs of South Australia, Bulloo River basin and the Murray/Darling river basin in New South Wales and Queensland, Australia.

**Etymology:** *Fere*, in Latin means not quite, or almost, hence the name *Ferepetrogale* literally means not quite *Petrogale*.

**Content:** *Petrogale (Ferepetrogale) xanthopus* Gray, 1855 (type species); *P. (Ferepetrogale) celeris* Le Souef, 1924.

#### PETROGALE (PERADORCAS) HOSERAE SP. NOV.

**LSID urn:lsid:zoobank.org:act:BD1569F2-126A-433F-B912-3FCEE388F73E**

**Holotype:** A preserved specimen at the Australian Museum in Sydney, New South Wales, Australia, specimen number M.38966 collected at Moonlight Gorge, Wollgorang, Northern Territory, Australia, Latitude -17.20 S., Longitude 137.80 E. This government-owned facility allows access to its holdings.

**Paratype:** A preserved female specimen at the Australian Museum in Sydney, New South Wales, Australia, specimen number M.45290.001 collected at Red Bank Mine, Wollgorang, N.T., Australia, Latitude -17.18 S., Longitude 137.73 E.

**Diagnosis:** The species *Petrogale hoserae sp. nov.* has until now been treated as a number of other taxa, most notably *P. brachyotis* (Gould, 1841) until the review of the species group by Potter *et al.* (2014).

While finding the lineage herein described as a new species to be divergent from the species *P. wilkinsi* Thomas, 1926 (from the top end of the Northern Territory), Potter *et al.* (2014) placed this taxon and another described form, namely *P. longmani* Thomas, 1926 from Groote Eylandt, Northern into the synonymy of *P. wilkinsi*.

On the basis of morphological, molecular and reproductive divergence, all three of these forms, all occurring in the Northern Territory are herein treated as separate species.

All three species fit within the diagnosis of *P. wilkinsi* as published within Potter *et al.* (2014).

The three species are readily separated from one another and other species in the subgenus *Peradorcas* on the basis of colouration which is as follows:

*P. wilkinsi*, *P. longmani* and *P. hoserae* *sp. nov.* are all readily separated from both *P. victoriae* (Eldridge and Potter, 2014) (treated here as a full species as opposed a subspecies of *P. brachyotis* as originally named) and all subspecies of *P. brachyotis* by the following suite of characters:

Dorsal surface is dark grey to grey/brown (*P. wilkinsi*), or silverish-grey in colour (*P. longmani*), or a yellowish-brown colour (*P. hoserae* *sp. nov.*). In *P. wilkinsi* and *P. longmani* the ventral surfaces are distinctly marked, while in *P. hoserae* *sp. nov.* they are less so. In *P. wilkinsi* and *P. longmani* the dorsal stripe is a prominent dark brown/black colour, running from forehead to beyond shoulders and slightly less so in *P. hoserae* *sp. nov.*. Likewise for the distinct white shoulder stripe behind a well developed dark axillary patch, which is present, but slightly less distinct in *P. hoserae* *sp. nov.*.

Limbs are distinctly and often brightly coloured; from yellow through orange to reddish brown. Face is distinct, being light brown to orangey brown in *P. wilkinsi* and *P. longmani*, while being a dark brown to blackish in *P. hoserae* *sp. nov.*.

The tail is lighter than the body on the dorsal surface, sides more yellowish. Terminal 1/5 to 1/3 tail is darker; brown to almost black, especially towards the tip.

*P. longmani* is separated from both *P. wilkinsi* and *P. hoserae* *sp. nov.* by its overall silvery-grey colour, including a grey shoulder stripe and axillary patch that is black; dorsal stripe being thick and dark, extending to the mid back and enlarged into an irregular dark patch on top of the head.

*P. hoserae* *sp. nov.* is separated from both *P. wilkinsi* and *P. longmani* by its distinctively light brown colour dorsally (or alternatively yellow), sometimes with a strong reddish tinge, markings, including ventral ones, are clearly faded and not prominent and the tail and face are also exceptionally dark.

*P. brachyotis* (all subspecies) and *P. victoriae* (Eldridge and Potter, 2014) (treated here as a full species as opposed a subspecies of *P. brachyotis* as originally named) are separated from all other species in the subgenus *Peradorcas* by the following characters: Back of ears uniform grey or fawn, sometimes tipped with white. No occipital or nuchal streak. Shoulder markings are present.

Frontal outline is convex or straight above the front of the orbit. Nasals are expanded behind.

*P. victoriae* are readily separated from *P. brachyotis* (all subspecies) by the following suite of characters: yellowish-grey colour dorsally; no side or hip stripes; virtually no ventral markings; limbs are same colour as body, or slightly more yellowish; face is slightly darker than neck and shoulders; the tail is the same colour as the body or lighter, then becoming a darker brown at the terminal third to fifth.

*P. martinekae* *sp. nov.* (until now treated as a population of *P. burbridgei*), *P. burbridgei* and *P. concinna* are separated from *P. brachyotis* (all subspecies), *P. victoriae* (Eldridge and Potter, 2014) (treated here as a full species as opposed a subspecies of *P. brachyotis* as originally named), *P. wilkinsi* Thomas, 1926, *P. longmani* Thomas, 1926 and *P. hoserae* *sp. nov.* by their smaller size, the hind foot being 105 mm long or smaller, versus over 105 mm in the other species.

*P. victoriae* (Eldridge and Potter, 2014) (treated here as a full species as opposed a subspecies of *P. brachyotis* as originally named) and *P. brachyotis* are separated from all of *P. hoserae* *sp. nov.*, *P. wilkinsi* and *P. longmani* by having no side stripe or hip stripe, versus a pale one in *P. hoserae* *sp. nov.*, *P. wilkinsi* and *P. longmani*, a grey (instead of white) shoulder stripe; an indistinct dorsal stripe (versus obvious) and a greyish white venter (instead of white).

**Distribution:** *P. hoserae* *sp. nov.* occurs from near Hells Gate, near Nicholson, far north-west Queensland, west along the southern edge of the Gulf of Carpentaria, through the type locality at Wollogorang, Northern Territory, where suitable hilly and rocky habitat occurs, to about Ngukurr, Walmudga Hill, 10km east of Ngukurr (Roper River Mission) and the nearby Sir Edward Pellew Islands.

**Etymology:** Named in honour of my mother, Katrina Joan Hoser, of Lane Cove, New South Wales, Australia, for services to wildlife conservation spanning more than 50 years.

**PETROGALE (PERADORCAS) MARTINEKAE SP. NOV.**

**LSID urn:lsid:zoobank.org:act:4E88DBDF-B805-401A-B767-65B1751D1A6A**

**Holotype:** A preserved specimen at the Australian Museum in Sydney, New South Wales, Australia, specimen number M.47136.001, collected from the edge of the Munboon Plateau, Western Australia, Latitude -16.4 S., Longitude 125.1 E. This government-owned facility allows access to its holdings.

**Paratype:** A preserved specimen at the Western Australian Museum in Perth, Western Australia, Australia, specimen number M54836 collected from the Prince Regent River -15.6 S., Longitude 125.3 E.

**Diagnosis:** *Petrogale martinekae* *sp. nov.* has until now been treated as a southern population of a lineage of *P. burbridgei* Kitchener and Sanson, 1978, as defined by those authors. However Potter *et al.* (2014) identified this taxon as being divergent enough to warrant species-level identification and for which no name was available (Bannister *et al.* 1988).

*P. martinekae* *sp. nov.* is similar in most respects to *P. burbridgei* and would until now be identified as that taxon. *P. martinekae* *sp. nov.* It is however separated from *P. burbridgei* by the following suite of adult characters in life: the inner ears have a distinct light bluish tinge, versus pink in *P. burbridgei*; while both species are brownish in pelage, the outer grey to black peppering is prominent in *P. martinekae* *sp. nov.* and indistinct in *P. burbridgei*. The upper hind feet are greyish black in *P. martinekae* *sp. nov.* versus dark brown in *P. burbridgei*. The fur of the centre of the chest in *P. martinekae* *sp. nov.* is white, versus off-white in *P. burbridgei*. The black line running from the nose to the crown is well-defined in *P. martinekae* *sp. nov.* versus ill-defined in *P. burbridgei*.

*P. martinekae* *sp. nov.* and *P. burbridgei* are morphologically similar to *P. concinna* Gould, 1842, but both are readily separated from that taxon (all subspecies) by having obviously shorter ears, being less than 35 mm long, versus greater than 35 mm in *P. concinna*. Type *P. brachyotis* (Gould, 1841) have a well-defined dark brown neck stripe to about the level of the shoulder, as does the east Kimberley lineage herein named *P. brachyotis pentecostensis* *subsp. nov.*. This is either indistinct or only prominent on the elbow region in *P. martinekae* *sp. nov.* and *P. burbridgei*. The taxon *P. brachyotis ordensis* *subsp. nov.* is separated from *P. martinekae* *sp. nov.* and *P. burbridgei* by having well-defined face markings versus indistinct in *P. martinekae* *sp. nov.* and *P. burbridgei*.

*P. martinekae* *sp. nov.*, *P. burbridgei* and *P. concinna* are separated from *P. brachyotis* (all subspecies), *P. victoriae* (Eldridge and Potter, 2014) (treated here as a full species as opposed a subspecies of *P. brachyotis* as originally named), *P. wilkinsi* Thomas, 1926, *P. longmani* Thomas, 1926 and *P. hoserae* *sp. nov.* by their smaller size, the hind foot being 105 mm long or smaller, versus over 105 mm in the other species. *P. martinekae* *sp. nov.* can be seen in life in images at: <https://www.flickr.com/photos/12742129@N07/49114207146/> and <https://www.flickr.com/photos/12742129@N07/49114420862/> and <https://www.flickr.com/photos/12742129@N07/49114387852/> *P. burbridgei* Kitchener and Sanson, 1978 can be seen in life in

images at:

<https://www.flickr.com/photos/126002448@N02/21199638021/>  
and

<https://www.flickr.com/photos/88708273@N03/48945453017/>  
and

<https://www.flickr.com/photos/reptileshots/14533826956/>  
and

<https://www.flickr.com/photos/reptileshots/14584554932/>  
and

<https://www.flickr.com/photos/88708273@N03/48944717823/>

**Distribution:** *P. martinekae* sp. nov. is known only from the region running from the Prince Regent River to the Munboon Plateau in the west Kimberley district of Western Australia.

*P. burbidgei* Kitchener and Sanson, 1978 is found from the Prince Regent River north to the Mitchell Plateau, including some offshore islands.

**Etymology:** Named in honour of Maryann Martinek, in 2020 of Bendigo, Australia, in recognition of her services to wildlife conservation globally. For more detail refer to Hoser (2010).

**PETROGALE (PERADORCAS) BRACHYOTIS  
PENTECOSTENSIS SUBSP. NOV.**

**LSID urn:lsid:zoobank.org:act:2DB42ACD-F0E3-453F-AFD4-ACC526A97859**

**Holotype:** A preserved female specimen at the Australian Museum in Sydney, New South Wales, Australia, specimen number M.45275.003 collected at El Questro Station, Pentecost River, Kimberley District, Western Australia, Australia, Latitude -16.03 S., Longitude 127.98 S.

This government owned facility allows access to its holdings.

**Paratypes:** Five preserved specimens at the Australian Museum in Sydney, New South Wales, Australia, specimen numbers M.45274.004, M.45272.003, M.45271.002, M.45273.002 and M.45274.004 collected from at or immediately adjacent to (within 10 km) the type locality given above.

**Diagnosis:** Until now the subspecies *Petrogale brachyotis pentecostensis* subsp. nov. has been treated as an easterly population of nominate *P. brachyotis* (Gould, 1841), although I note Eldridge and Potter (2014) found subspecies level mtDNA divergence for this population as compared to another population east of this one, being east of the Ord River and herein named as *P. brachyotis ordensis* subsp. nov. and the nominate *P. brachyotis* from the north-west Kimberley district.

All three can be readily separated on the basis of colouration.

Nominate *P. brachyotis brachyotis* is separated from *P. brachyotis pentecostensis* subsp. nov. and *P. brachyotis ordensis* subsp. nov. by the following characters: having a reddish-brown dorsal colour, very well defined side markings, distinctively orangeish hind limbs, generally dark greyish head and orangish grey inner ears.

*P. brachyotis pentecostensis* subsp. nov. is separated from *P. brachyotis brachyotis* and *P. brachyotis ordensis* subsp. nov. by the following characters: having a greyish dorsum with limited amounts of orange or russet dusting on the hind limbs, moderately well defined side markings, a face that is no darker than the body with ill defined and light, darker markings on the snout (versus dark and well defined in the other two subspecies) and a brownish head and brown inner ears.

*P. brachyotis ordensis* subsp. nov. is separated from *P. brachyotis pentecostensis* subsp. nov. and *P. brachyotis brachyotis* by the following characters: having a light greyish dorsum, flecked with either yellow or orangeish, with brown, rather than orange on the hind limbs, ill defined side markings (versus well defined in *P. brachyotis pentecostensis* subsp. nov. and *P. brachyotis*), a generally greyish-beige head, being dark at tip of snout and between snout and eye and lighter elsewhere and a greyish-purple inner ear.

*P. brachyotis* (all subspecies) and *P. victoricae* (Eldridge and

Potter, 2014) (treated here as a full species as opposed a subspecies of *P. brachyotis* as originally named) are separated from all other species in the subgenus *Peradorcas* by the following characters: Back of ears uniform grey or fawn, sometimes tipped with white. No occipital or nuchal streak. Shoulder markings are present.

Frontal outline is convex or straight above the front of the orbit. Nasals are expanded behind,

*P. victoricae* are readily separated from *P. brachyotis* (all subspecies) by the following suite of characters: yellowish-grey colour dorsally; no side or hip stripes; virtually no ventral markings; limbs are same colour as body, or slightly more yellowish; face is slightly darker than neck and shoulders; the tail is the same colour as the body or lighter, then becoming a darker brown at the terminal third to fifth.

Images of nominate *Petrogale brachyotis brachyotis* in life can be found online at:

<https://www.flickr.com/photos/123952930@N04/44125908541/>  
and

<https://www.flickr.com/photos/ailognom/39807952372/>  
and

<https://www.flickr.com/photos/ailognom/39807959912/>

An image of *P. brachyotis pentecostensis* subsp. nov. in life can be seen at:

[https://splashingpaint.files.wordpress.com/2019/06/p\\_wa9335x.jpg](https://splashingpaint.files.wordpress.com/2019/06/p_wa9335x.jpg)

Images of *P. brachyotis ordensis* subsp. nov. in life can be seen at:

<https://www.flickr.com/photos/58349528@N02/44492360964/>  
and

<https://www.flickr.com/photos/58349528@N02/45163729682/>  
and

<https://www.flickr.com/photos/58349528@N02/44302861675/>

**Distribution:** *P. brachyotis pentecostensis* subsp. nov. is known only from the immediate vicinity of the type locality as well as the Ord basin (known from Monsmont Island in Lake Argyle) and assumed to occupy only this general region and slightly west of there to the Durack River.

**Etymology:** Named after the type locality, the Pentecost River.

**PETROGALE (PERADORCAS) BRACHYOTIS ORDENSIS  
SUBSP. NOV.**

**LSID urn:lsid:zoobank.org:act:64577A73-8436-493E-85D3-40D87F1FD1B6**

**Holotype:** A preserved specimen at the Western Australian Museum Mammal Collection, Perth, Western Australia, Australia, specimen number M19865 collected from Point Spring, Western Australia, Australia, Latitude -15.41 S., Longitude 128.89 E. This government owned facility allows access to its holdings.

**Paratype:** A preserved specimen at the Western Australian Museum Mammal Collection, Perth, Western Australia, Australia, specimen number M24401 collected from Ninbing Bore, WA, Australia, Latitude -15.41 S., Longitude 128.40 E.

**Diagnosis:** Until now the subspecies *Petrogale brachyotis pentecostensis* subsp. nov. has been treated as an easterly population of nominate *P. brachyotis* (Gould, 1841), although I note Eldridge and Potter (2014) found subspecies level mtDNA divergence for this population as compared to another population east of this one, being east of the Ord River and herein named as *P. brachyotis ordensis* subsp. nov. and the nominate *P. brachyotis* from the north-west Kimberley district.

All three can be readily separated on the basis of colouration.

Nominate *P. brachyotis brachyotis* is separated from *P. brachyotis pentecostensis* subsp. nov. and *P. brachyotis ordensis* subsp. nov. by the following characters: having a reddish-brown dorsal colour, very well defined side markings,

distinctively orangeish hind limbs, generally dark greyish head and orangish grey inner ears.

*P. brachyotis pentecostensis* subsp. nov. is separated from *P. brachyotis brachyotis* and *P. brachyotis ordensis* subsp. nov. by the following characters: having a greyish dorsum with limited amounts of orange or russet dusting on the hind limbs, moderately well defined side markings, a face that is no darker than the body with ill defined and light, darker markings on the snout (versus dark and well defined in the other two subspecies) and a brownish head and brown inner ears.

*P. brachyotis ordensis* subsp. nov. is separated from *P. brachyotis pentecostensis* subsp. nov. and *P. brachyotis brachyotis* by the following characters: having a light greyish dorsum, flecked with either yellow or orangeish, with brown, rather than orange on the hind limbs, ill defined side markings (versus well defined in *P. brachyotis pentecostensis* subsp. nov. and *P. brachyotis*), a generally greyish-beige head, being dark at tip of snout and between snout and eye and lighter elsewhere and a greyish-purple inner ear.

*P. brachyotis* (all subspecies) and *P. victoriae* (Eldridge and Potter, 2014) (treated here as a full species as opposed a subspecies of *P. brachyotis* as originally named) are separated from all other species in the subgenus *Peradorcas* by the following characters: Back of ears uniform grey or fawn, sometimes tipped with white. No occipital or nuchal streak. Shoulder markings are present.

Frontal outline is convex or straight above the front of the orbit. Nasals are expanded behind.

*P. victoriae* are readily separated from *P. brachyotis* (all subspecies) by the following suite of characters: yellowish-grey colour dorsally; no side or hip stripes; virtually no ventral markings; limbs are same colour as body, or slightly more yellowish; face is slightly darker than neck and shoulders; the tail is the same colour as the body or lighter, then becoming a darker brown at the terminal third to fifth.

Images of nominate *Petrogale brachyotis brachyotis* in life can be found online at:

<https://www.flickr.com/photos/123952930@N04/44125908541/>  
and

<https://www.flickr.com/photos/ailognom/39807952372/>  
and

<https://www.flickr.com/photos/ailognom/39807959912/>

An image of *P. brachyotis pentecostensis* subsp. nov. in life can be seen at:

[https://splashingpaint.files.wordpress.com/2019/06/p\\_wa9335x.jpg](https://splashingpaint.files.wordpress.com/2019/06/p_wa9335x.jpg)

Images of *P. brachyotis ordensis* subsp. nov. in life can be seen at:

<https://www.flickr.com/photos/58349528@N02/44492360964/>  
and

<https://www.flickr.com/photos/58349528@N02/45163729682/>  
and

<https://www.flickr.com/photos/58349528@N02/44302861675/>

**Distribution:** *Petrogale brachyotis ordensis* subsp. nov. is known only from the region between the lower Ord River, Western Australia and the Bullo River in the Northern Territory.

**Etymology:** Named in reflection of the region the subspecies occurs and is most commonly seen, being the lower Ord River area in Western Australia, as in near Kununurra.

#### CONSERVATION STATUS AND LONG TERM SURVIVAL PROSPECTS OF EACH DESCRIBED TAXON ABOVE

In terms of conservation of each population of each species or subspecies as described above, the comments in Hoser (1991, 1993, 1996, 2019a and 2019b) apply.

None of the above taxa are regarded as under immediate risk of extinction, as best as such a judgement can be made in the

world of 2020.

Wildlife laws as currently enforced in Australia are not in any materially significant way enhancing the long-term survival prospects of any of the relevant species and in any event are being vastly outweighed by other negative impacts of governments, including their ongoing commitment to growing the human population to a level that can only put further pressure on the survival prospects of the relevant taxa

If the Australian government persists with its "Big Australia Policy", (see for example Saunders 2019 or Zaczek 2019), that being a long-term aim to increase the human population in Australia to over 100 million people by year 2150 (from the present 25 million as of 2019), all sorts of unforeseen threats to the survival of these species will almost certainly emerge.

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#### CONFLICTS OF INTEREST

None.

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