1.1.1 Latham’s Snipe (Gallinago hardwickii).

Latham's Snipe is a medium sized wader, and the largest snipe in Australia, with a length of 29-33 cm, a wingspan of 50-54 cm and a mass of 150-230 g. It has a long straight bill, rather short broad pointed wings, a long tail and short legs. The cryptic plumage is intricately marked with barring and chevrons of buff, black and various shades of brown, with blackish-brown stripes across the crown and cream streaks down the back. The belly and parts of the head are white, and the tail is rufous with a white tip. The eyes are large and blackish-brown in colour. The colour of the bill varies from pale-brown to olive, becoming blackish at the distal third and olive-yellow at the base. The legs and feet are olive-grey to olive in colour. The sexes are similar in appearance, and there is no seasonal variation in the plumage. Juveniles in fresh plumage differ only slightly from adults, but can be distinguished by slight differences in the patterning on the upperwing. Adults and juveniles are indistinguishable after early November. In non-breeding areas, snipe that are flushed from cover flee with a distinctive and rapid 'zig-zagging' flight.

Distribution

Latham's Snipe is a non-breeding visitor to south-eastern Australia, and is a passage migrant through northern Australia (i.e. it travels through northern Australia to reach non-breeding areas located further south). The species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia (including the Adelaide plains and Mount Lofty Ranges, and the Eyre Peninsula). The range extends inland over the eastern tablelands in south-eastern Queensland (and occasionally from Rockhampton in the north), and to west of the Great Dividing Range in New South Wales. The species is widespread in Tasmania and is found in all regions of Victoria except for the north-west. Most birds spend the non-breeding period at sites located south of the Richmond River in New South Wales.

The species is occasionally recorded at sites located to the west of the core range (e.g. in north-western and south-western Queensland, north-western New South Wales, mid-northern South Australia, the Northern Territory and Western Australia). It is also an irregular visitor to Norfolk Island and Lord Howe Island, and possibly to Macquarie Island (records are unconfirmed).

Habitat and ecology

- In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity.
- Latham's Snipe occurs in temperate and tropical regions of Australia. Its altitudinal range extends from sea-level (i.e. the coast) or possibly below. For example, there are records from near Lake Eyre.
- In Australia, Latham's Snipe occurs in a wide variety of permanent and ephemeral wetlands. They usually occur in open, freshwater wetlands that have some form of shelter (usually low and dense vegetation) nearby. They generally occupy flooded meadows,

seasonal or semi-permanent swamps, or open waters, but various other freshwater habitats can be used including bogs, waterholes, billabongs, lagoons, lakes, creek or river margins, river pools and floodplains. The structure and composition of the vegetation that occurs around these wetlands is not important in determining the suitability of habitat. As such, snipe may be found in a variety of vegetation types or communities including tussock grasslands with rushes, reeds and sedges, coastal and alpine heathlands, lignum or tea-tree scrub, button-grass plains, alpine herbfields and open forest.

This species was not detected during surveys; however, it is listed as "known" to occur in the locality in the PMST report. The Study Area contains suitable foraging habitat for this species in the form of artificial waterbodies with exposed mud banks, one of which occurs within the Subject Land.

a) Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species;

The Proposed Action would remove one artificial waterbody containing small areas of exposed muddy bank habitat from the Project Area. Other non-threatened wading birds were seen using this habitat during surveys, namely the Black-fronted Dotterel (*Elseyornis melanops*), indicating that this habitat is used by such species.

Latham's Snipe primarily rely on larger wetland complexes and river deltas for foraging during migration with small artificial waterbodies only providing habitat for a small portion of the annual migration.

No key site listed in the SPRAT database profiles for this species occur near to the Project Area (Commonwealth of Australia, 2024b). The nearest is the Pitt Town Lagoon, approximately 50km to the north of the Project Area. The Towra Point wetlands are within 20km of the Project Area; however, these wetlands are not listed as important to this species in its SPRAT profile.

Therefore, the habitat present in the Project Area is not considered important foraging habitat for this species during migrations.

b) Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species; or

This species is susceptible to terrestrial exotic predators, primarily cats. The Proposed Action is for a commercial development and would not include the importation of new domestic predators (household pets). The Proposed Action would expand the existing operations of the adjacent LHRRP into the Project Area, with any potential drivers of new predator expansion from this activity likely already to be present from the adjacent facility.

New weed populations are likely to establish in retained vegetation fringing the Project Area following development. However, the northern boundary of the Study Area currently has significant areas of exposed cleared areas adjacent to native vegetation due to the activities of the target shooting club grounds. Limited weed colonisation of adjacent native vegetation was evident during surveys.

The Proposed Action is not considered likely to substantially increase the predation pressure from domestic predators on this species in the locality. As detailed in point a above, the habitat in the Project Area is not considered important for this species during migration.

c) Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

This species does not breed in Australia, migrating to the continent to over winter during the southern hemisphere summer. The habitat present consists of a small artificial waterbody of limited refuge and foraging value. The Project Area does not occur near to any known important migratory grounds for this species, see point a above.

The Proposed Action is not considered likely to seriously disrupt the lifecycle of an ecologically significant proportion of the population of this species.

Conclusion

The Study Area contains suitable habitat, and this species is likely to occur in the locality. The Proposed Action would remove a small artificial waterbody with some foraging utility for this species from the Project Area. However, resources for this species are limited in the locality, with no major river deltas or wetland complexes nearby. The habitat to be removed is not considered an important resource for the migratory success of this species.

No significant impact on this species is considered likely because of the Proposed Action.

1.1.2 Terrestrial Migratory Birds

This test considers the following species, listed as migratory under the EPBC Act:

- Fork-tailed Swift (*Apus pacificus*).
- White-throated Needletail (*Hirundapus caudacutus*).

The Fork-tailed Swift is a medium to large member of the Apodidae Family. It has a length of 18–21 cm, a wingspan of 40–42 cm and weighs around 30–40 g. It is a medium-sized Swift, with a slim body with long scythe-shaped wings that taper to finely pointed tips. It is characterized by a long and deeply forked tail. It is smaller and slimmer than the White-throated Needletail, *Hirundapus caudacutus*, with much narrower wings and a longer, more deeply forked tail. It is much bigger than Swiftlets with much longer wings and a lower forked tail. The Fork-tailed Swift is mainly blackish with a white band across the rump. There is also a white patch on the chin and throat. The body, tail and upperwings are black-brown and they have a faint pale scaling to the saddle and white scalloping to the underbody. The sexes are alike with no seasonal variation, juveniles are also indistinguishable in the field.

Distribution

The Fork-tailed Swift is a non-breeding visitor to all states and territories of Australia. In NSW, the Fork-tailed Swift is recorded in all regions. Many records occur east of the Great Divide, however, a few populations have been found west of the Great Divide. These are widespread but

scattered further west of the line joining Bourke and Dareton. Sightings have been recorded at Milparinka, the Bulloo River and Thurloo Downs.

Habitat and ecology

- In Australia, they mostly occur over inland plains but sometimes above foothills or in coastal areas. They often occur over cliffs and beaches and also over islands and sometimes well out to sea. They also occur over settled areas, including towns, urban areas and cities. They mostly occur over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh.
- They are also found at treeless grassland and sandplains covered with spinifex, open farmland and inland and coastal sand-dunes. The sometimes occur above rainforests, wet sclerophyll forest or open forest or plantations of pines.
- They forage aerially, up to hundreds of metres above ground, but also less then 1 m above open areas or over water. They often occur in areas of updraughts, especially around cliffs. They are said to search along edges of low-pressure systems, which assist flight. Low-flying Swifts are said to be precursors of unsettled weather, possibly because insect prey fly at a lower altitude when the air is humid and when the air density is low.
- They sometimes feed aerially among tree-tops in open forest. They probably roost aerially, but are occasionally observed to land. They were once recorded roosting in trees, using a bare exposed branch emergent above the foliage. Sometimes they loaf in the air, by allowing strong winds to support them.
- There have been rare records of loafing elsewhere including Swifts briefly resting on ground and alighting on wire netting of a tennis court. Once, one was seen attempting to land on the wall of a lighthouse.
- The Fork-tailed Swift does not breed in Australia. In their breeding range, they nest on mountain cliffs or island rock caves, inside narrow crevices or in cracks on vertical cliff faces. They are also known to nest in houses and occasionally in holes in trees.
- They breed from April to July, usually in small colonies, producing two or three eggs per brood.
- The species food items within Australia are not well known, however, the Fork-tailed Swift is known to be insectivorous. Studies have recorded the Swift eating small bees, wasps, termites and moths.
- The Fork-tailed Swift is an aerial eater, flying anywhere from 1 m to 300 m above the ground to forage. They forage along the edge of low pressure systems and for that reason are considered a precursor to unsettled weather. The low pressure system helps to lift prey, such as insects, from the ground and assists in flight. Feeding flight is characterized by circular flight patterns throughout areas of high prey concentration. They feed in flocks ranging from 10 to 1000 birds.

The White-throated Needletail is a large (20 cm in length and approximately 115–120 g in weight) swift with a thickset, cigar-shaped body, stubby tail and long pointed wings. Sexes are alike, with no seasonal variation, and juveniles are separable with good visibility. The adults have a dark-olive head and neck, with an iridescent gloss on the crown; the mantle and the back are paler,

greyish; and the upperwings are blackish, sometimes with a greenish gloss, with a contrasting white patch at the base of the trailing edge; the uppertail is black with a greenish gloss. The face is dark-olive with a narrow, white band across the forehead and lores and a white patch on the chin and throat. The underparts are generally dark-olive except for a U-shaped band across the rear flanks, the vent and the undertail coverts, and the undertail is black with a greenish gloss. The underwing is black brown with glossy grey-brown flight feathers. The bill is black, the eyes black-brown and the legs and feet are dark grey, sometimes with a pinkish tinge.

Distribution

The White-throated Needletail is widespread in eastern and south-eastern Australia. In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. Further south on the mainland, it is widespread in Victoria, though more so on and south of the Great Divide, and there are few records in western Victoria outside the Grampians and the South West.

The species occurs in adjacent areas of south-eastern South Australia, where it extends west to the Yorke Peninsula and the Mount Lofty Ranges. It is widespread in Tasmania. White-throated Needletails only occur as vagrants in the Northern Territory (recorded in the Top End, including around Darwin, Katherine and Mataranka and Tennant Creek; and further south around Alice Springs) and in Western Australia (at disparate sites from the Mitchell Plateau in the Kimberley, south to the Nullarbor Plain and Augusta in the South West, and west to Barrow Island, the Houman Abrolhos and the Swan River Plain). The species is also a vagrant to various outlying islands, including Norfolk, Lord Howe, Macquarie, Christmas and Cocos-Keeling Islands.

Habitat and ecology

- In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable, but there are, nevertheless, certain preferences exhibited by the species.
- Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland. They also commonly occur over heathland, but less often over treeless areas, such as grassland or swamps.
- When flying above farmland, they are more often recorded above partly cleared pasture, plantations or remnant vegetation at the edge of paddocks. In coastal areas, they are sometimes seen flying over sandy beaches or mudflats, and often around coastal cliffs and other areas with prominent updraughts, such as ridges and sand-dunes.

These species were not recorded in the Study Area during surveys. However, suitable habitat is present and both are listed as “known” or “likely” to occur in the locality, with reference to the EPBC Act PMST Report. The Fork-tailed Swift and White-throated Needletail are also known from one and two records, respectively from the locality in the NSW BioNet database.

a) Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species;

The Proposed Action would remove a significant portion of foraging habitat for these species (18.20 ha). However, this habitat is not limited in the locality, with larger areas of native vegetation present on adjacent lands.

These species spend the majority of their lives airborne, foraging high over the land with a preference for vegetated areas (Commonwealth of Australia, 2024c) (Commonwealth of Australia, 2024d). The Project Area represents a small portion of the very wide aerial foraging range of these species.

Therefore, the habitat present in the Project Area is not considered important habitat for these migratory species.

b) Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species; or

These species are not particularly susceptible to terrestrial invasive predators, due to their arboreal and aerial life habit. The Proposed Action is for a commercial development and would not include the importation of new domestic predators (household pets). The Proposed Action would expand the existing operations of the adjacent LHRRP into the Project Area, with any potential drivers of new predator expansion from this activity likely already to be present from the adjacent facility.

New weed populations are likely to establish in retained vegetation fringing the Project Area following development. However, the northern boundary of the Study Area currently has significant areas of exposed cleared areas adjacent to native vegetation due to the activities of the target shooting club grounds. Limited weed colonisation of adjacent native vegetation was evident during surveys.

The Proposed Action is not considered likely to substantially increase the predation pressure from domestic predators on these species in the locality. As detailed in point a above, the habitat in the Project Area is not considered important for these species during migration.

c) Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

The Fork-tailed Swift and White-throated Needletail do not breed in Australia (Commonwealth of Australia, 2024c) (Commonwealth of Australia, 2024d). Based on these known breeding habitat preferences, the Project Area does not contain suitable breeding resources for these species.

As detailed in point a above, the habitat present is considered general foraging habitat and is not important to the migratory success of these species.

The Proposed Action is not considered likely to seriously disrupt the lifecycle of an ecologically significant proportion of the population of these species.

Conclusion

The Study Area contains suitable but general foraging habitat, and these species are likely to occur in the locality. The Proposed Action would remove a significant amount of habitat (19.39 ha) from the locality for these species. However, this consists of general foraging habitat and is not considered highly preferable habitat for any of these species. The habitat is considered likely to be used only opportunistically during migrations. These species either do not breed in Australia or the habitat present in the Project Area does not meet the species' known breeding habitat preferences.

No significant impact on these species is considered likely as a result of the Proposed Action.

2.0 References

Australian Government. 2023. National Flying-fox monitoring viewer. *Australian Government Department of Agriculture, Water and the Environment.* [Online] 17 December 2023. https://www.environment.gov.au/webgis-framework/apps/ffc-wide/ffc-wide.jsf.

—. 2021. National Flying-fox monitoring viewer. *Australian Government Department of Agriculture, Water and the Environment.* [Online] 06 July 2021. http://www.environment.gov.au/webgis-framework/apps/ffc-wide/ffc-wide.jsf.

Commonwealth of Austalia. 2023. *Conservation Advice for Calidris ferruginea (curlew sandpiper) .* Canberra : Commonwealth of Austalia, 2023.

Commonwealth of Australia. 2024a. Actitis hypoleucos — Common Sandpiper. *Australian Government Species Profile and Threats Database.* [Online] 07 April 2024a. [Cited: 07 April 2024.] http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=59309.

—. 2008. *Approved Conservation Advice for Leucopogon exolasius.* Canberra : Commonwealth of Australia, 2008.

—. 2010. *Approved Conservation Advice for Pseudomys novaehollandiae (New Holland Mouse) .* Canberra : Australian Government, 2010.

—. 2013. *Approved Conservation Advice for Rostratula australis (Australian painted snipe).* Canberra : Commonwealth of Australia, 2013.

—. 2024c. Apus pacificus — Fork-tailed Swift. *Species Profile and Threats Database.* [Online] 04 May 2024c. [Cited: 04 May 2024c.] https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=678.

—. 2024c. Calidris melanotos — Pectoral Sandpiper. *Australian Government Species Profile and Threats Database.* [Online] 07 April 2024c. [Cited: 07 April 2024.] http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=858.

—. 2024. *Conservation Advice for Calidris acuminata (sharp-tailed sandpiper).* Canberra : Australian Government, 2024.

—. 2022b. *Conservation Advice for Calyptorhynchus lathami lathami (South-eastern Glossy Black Cockatoo).* Canberra : Commonwealth of Australia, 2022b.

—. 2023. *Conservation Advice for Chalinolobus dwyeri (Large-eared Pied Bat).* Canberra : Commonwealth of Australia, 2023.

—. 2021. *Conservation Advice for Melaleuca deanei (Deane's Melaleuca).* Canberra : Commonwealth of Australia, 2021.

—. 2024. *Conservation Advice for Tringa nebularia (common greenshank).* Canberra : Commonwealth of Australia, 2024.

—. 2014. *Conservation Advice Genoplesium baueri (Brittle Midge Orchid, Yellow Gnat Orchid).* Canberra : Commonwealth of Australia, 2014.

—. 2019. *Conservation Advice Hirundapus caudacutus.* Canberra : Commonwealth of Australia, 2019.

—. 2016a. *Conservation Advice Isoodon obesulus obesulus.* Canberra : Commonwealth of Australia, 2016a.

—. 2014. *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (s266B) Conservation Advice (including listing advice) for Coastal Upland Swamps in the Sydney Basin Bioregion.* Canberra : Commonwealth of Australia, 2014.

—. 2024b. Gallinago hardwickii — Latham's Snipe, Japanese Snipe. *Australian Government Species Profile and Threats Database.* [Online] 07 April 2024b. [Cited: 07 April 2024.] https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=863.

—. 2024d. Hirundapus caudacutus — White-throated Needletail. *Species Profile and Threats Database.* [Online] 04 May 2024d. [Cited: 04 May 2024d.] https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=682.

—. 2000. Leucopogon exolasius — Woronora Beard-heath SPRAT Profile. *Species Profile and Threats Database.* [Online] Commonwealth of Australia, 16 July 2000. [Cited: 19 March 2024.] https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=14251.

—. 2013. *Matters of National Environmental Significance Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999.* Canberra : Commonwealth of Australia, 2013.

—. 2013. *Matters of National Environmental Significance Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999Environment Protection and Biodiversity Conservation Act 1999.* Canberra : Commonwealth of Australia, 2013.

—. 2024. Monarcha melanopsis — Black-faced Monarch. *Species Profile and Threats Database.* [Online] 04 May 2024. [Cited: 04 May 2024.] https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=609.

—. 2024b. Myiagra cyanoleuca — Satin Flycatcher. *Species Profile and Threats Database.* [Online] 04 May 2024b. [Cited: 04 May 2024b.] https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=612.
—. 2022. *National Recovery Plan for the Australasian Bittern Botaurus poiciloptilus.* Canberra : Commonwealth of Australia, 2022.
—. 2021. *National Recovery Plan for the Grey-headed Flying-fox Pteropus poliocephalus.* Canberra : Commonwealth of Australia, 2021.
—. 2022. *National Recovery Plan for the Koala Phascolarctos cinereus (combined populations of Queensland, New South Wales and the Australian Capital Territory).* Canberra : Commonwealth of Australia, 2022.
—. 2016. *National Recovery Plan for the Spotted-tailed Quoll Dasyurus maculatus.* Canberra : Commonwealth of Australia, 2016.
—. 2010. *National Recovery Plan Melaleuca deanei F. Muell. (Deane's Paperbark).* Canberra : Commonwealth of Australia, 2010.
—. 2010. Pseudomys novaehollandiae — New Holland Mouse, Pookila. *Australian Government Species Profile and Threats Database.* [Online] 11 August 2010. [Cited: 07 April 2024.] https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=96.
—. 2024a. Rhipidura rufifrons — Rufous Fantail. *Species Profile and Threats Database.* [Online] 04 May 2024a. [Cited: 04 May 2024a.] https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=592.
—. 2024e. Rostratula australis — Australian Painted Snipe. *Species Profile and Threats Database.* [Online] 04 May 2024e. [Cited: 04 May 2024e.] https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=77037.
NSW Department of Climate Change, Energy, the Environment and Water. 2024. Ecological data Genoplesium baueri. *NSW Government Threatened Biodiversity Data Collection.* [Online] 19 March 2024. [Cited: 19 March 2024.] https://atlaseditor.bionet.nsw.gov.au/UI_Modules/TSM_/ProfileEdit.aspx?pId=10875&pType=SpeciesCode.
eq. *qwqweqwe.* eq.