

## 5. Wildlife survey results and implications

All wildlife species for the JHS site and surrounding areas recorded in the desk and field survey were noted. The data for those species that have a Canberra Airport risk rating of Extreme, Very high, High or Moderate are collated in Appendix 1. A summary of the survey results is presented in Table 1.

Lake Jerrabomberra and the associated urban ponds to the north-east provide the most local habitat for hazardous bird species, with large numbers of waterbirds often recorded there. Nine Australasian Darters observed circling over and perching beside the water bodies in February 2022, and there was evidence of recent breeding by Black Swans, Dusky Moorhens and Eurasian Coots. A record of 150 White Ibis on jetties and the island in Lake Jerrabomberra from 2021 carried a note by the observer that the site could become a roost site given that other known roosts had been recently abandoned. In February 2022 bird droppings on jetties and a solar panel raft and scaring devices (models of owls and hawks) placed on some jetties suggested that perching by large birds remains a problem.

No other potentially hazardous species that were not already in the Risk Rating Matrix and are likely to be affected by the development were recorded. For example, three Australian Pelicans were recorded at Lake Jerrabomberra in 2018 and large numbers (500-1000) of Eurasian Coots have been recorded at Googong Reservoir and Fyshwick Sewage Ponds (ACT), but the movements and distribution of these species will not be affected by the JHS development as it contains no water bodies.

The JHS site would originally have supported only low numbers of hazardous species due to its small size and the mostly well-drained treeless habitat and densely vegetated drainage line. Most species originally present are likely to have their numbers reduced during construction and operation of JHS due to loss of habitat and increased human disturbance.

Some birds may at times be attracted to the construction site to feed on prey items exposed by turning of soil, to temporary ponding caused by interrupted drainage and/or to waste foodstuffs (if not secured). These include Australian (White) Ibis, Australian Magpie, Masked Lapwing, Australian Wood Duck, Little Raven and Australian Raven. Feral (and native Crested) Pigeons and Wood Ducks may feed on grassed verges after seeding. Attraction of Wood Ducks, Magpies, Galahs, Feral Pigeons, Australian Ravens, Little Ravens and Magpie-larks to the JHS and nearby construction sites was observed in February 2022 (see photographs). At the JHS site this is not expected to add significantly to aircraft hazards as birds are likely to be attracted for short periods and to be making low-level flights from local populations, and the construction site will be small compared to others nearby. An exception would be if Australian Ibis visited as they could fly higher through the flight path on their way from the Mugga Lane tip. Large birds such as these often circle on thermals to gain height before making longer movements. Mitigation measures are suggested in Section 6.

The landscape design appears to include little if any irrigated mown grass and, if implemented, this would minimise foraging habitat for a number of species of concern (Wood Ducks, Straw-necked Ibis, Australian Magpie, Masked Lapwing, Australian Raven, Magpie-lark). There are no playing fields and one small play area will use artificial grass. The use of unirrigated native grasses has been suggested for perimeter buffer plantings and to rehabilitate the unused southern and eastern slopes of the site and this should attract little wildlife of concern.

The suggested tree planting list for amenity plantings (CONTEXT Landscape Architecture 2021) includes some undesirable species such as American Black Walnut *Juglans nigra*, and Chinese Pistachio *Pistacia chinensis* and Pin-oak *Quercus palustris*. Sulphur-crested Cockatoos occur in mobile flocks and feed on the fruits of these trees, as may Little Corellas which are also common in the area. The landscape architecture report also says that 'orchards will contain endemic, native and exotic species to be used as fresh produce in the food tech classes', and it should be noted that some fruit trees may attract flying-foxes and cockatoos if not netted.

Some architectural design features can inadvertently provide increased nesting and perching sites for Feral Pigeons and could increase their numbers in a district. Features which could facilitate this are the low-pitched roofs, pierced and folded metal screens mounted out from the building or over external stairs, articulated façade which may provide extra ledges and covered walkways/spaces between buildings. Pigeons could also take advantage of discarded food from school lunches or feeding by students. In addition, minimising Feral Pigeon numbers is desirable for health and safety due to the risk of contamination with faecal material and parasites and their accumulation of dry nesting material which can pose a fire hazard or block downpipes.

Table 1. Summary of wildlife survey results and implications

(blue entries indicate potential increases in hazard, addressed in Section 6, Mitigation measures)

Species	Risk Rating (Airport)	Habitat/records in vicinity (within ca 10 km of JHS site)	Potential effect during JHS construction	Potential effect of JHS operation
Galah <i>Eolophus roseicapilla</i>	Extreme(>9 birds) Very high (<10)	Occurs at and around site, common in grassland, woodland, parks, suburbs	Fewer likely due to vegetation clearing and human disturbance	Neutral - reduced foraging areas, increase in perching sites
Australian Wood (Maned) Duck <i>Chenonetta jubata</i>	Very high	Numerous in wetlands and irrigated grasslands around site	Small numbers may be attracted to temporary ponding or to feed on seeds/shoots after seeding of verges	Numbers likely to be reduced due to lack of ponds and irrigated grassland
Straw-necked Ibis <i>Threskiornis spinicollis</i>	Very high	Occasional in small numbers around site	Fewer likely due to vegetation clearing and human disturbance	Numbers likely to be reduced due to lack of ponds and irrigated grassland
Wedge-tailed Eagle <i>Aquila audax</i>	Very high	Frequent records of 1-2 birds soaring in area	Less likely to occur due to human disturbance	Less likely to occur due to loss of foraging habitat
Little Eagle <i>Hieraaetus morphnoides</i>	Very high	Occasional records of 1-2 birds soaring in area	Less likely to occur due to human disturbance	Less likely to occur due to loss of foraging habitat
Grey-headed Flying-fox <i>Pteropus poliocephalus</i>	Very high	A few records from Queanbeyan/Jerrabomberra mainly wildlife rescues. Known large colony 12km to north-west at Commonwealth Park (ACT)	None, no habitat present	Small numbers could feed in landscaping/garden trees
Black Swan <i>Cygnus atratus</i>	High	2-6 birds occasionally recorded at Lake Jerrabomberra and local ponds	None, no habitat present	None, no habitat created or lost
Australasian Darter <i>Anhinga novaehollandiae</i>	High	Up to nine birds observed on and over Lake Jerrabomberra	None, no habitat present	None, no habitat created or lost
Eastern Grey Kangaroo <i>Macropus giganteus</i>	High	Present at JHS site, common in surrounding grassland and occasional in parkland	Numbers will be reduced by vegetation clearing	Numbers will be reduced by vegetation clearing, no effect on population near Airport
Wombat <i>Vombatus ursinus</i>	High	Present at JHS site, currently common in surrounding pasture and along Jerrabomberra Creek	Fewer likely due to vegetation clearing and human disturbance	Numbers will be reduced by vegetation clearing, no effect on population near Airport
Great Cormorant <i>Phalacrocorax carbo</i>	High	Small numbers at Lake Jerrabomberra	None, no habitat present	None, no habitat created or lost
Australian (White) Ibis <i>Threskiornis molucca</i>	High	Some at nearby wetlands, high of 150 on island/jetties at Lake Jerrabomberra 6/2021. Many at Mugga Lane tip 4km west of JHS (e.g. 300, 1/2022)	Small numbers could be attracted to turned earth/temporary ponding or workers' food waste	Occasional birds could be attracted if food waste not correctly disposed of at school site
Australian Magpie <i>Gymnorhina tibicen</i>	High	Common species in all habitats around JHS. 31 seen feeding on freshly-graded soil onsite in Feb 2022.	Groups may be attracted to feed on invertebrates in disturbed soil. Likely to be local birds only	Neutral - small numbers could nest in landscaping trees, but most onsite foraging habitat will be lost
Masked Lapwing <i>Vanellus miles</i>	High	Small numbers present around water bodies and in irrigated grassland	Small numbers could be attracted to disturbed soil and ponding at night.	Not likely to be present due to lack of habitat

**Table 1. (continued)**

Species	Risk Rating (Airport)	Habitat/records in vicinity (within ca 10 km of JHS site)	Potential effect during JHS construction	Potential effect of JHS operation
Little Raven <i>Corvus mellori</i>	High	Flocks occur in area, especially in winter.	Groups may be attracted to feed on invertebrates in disturbed soil.	Not likely to be present due to lack of habitat
Australian Raven <i>Corvus coronoides</i>	High	Pairs and small family groups occur in grassland, woodland and parklands	Small numbers may be attracted to feed on invertebrates in disturbed soil or to workers' food waste	Numbers not likely to increase
Little Corella <i>Cacatua sanguinea</i>	High	Flocks occur in parklands and tree plantations	No likely effect	Small numbers may use landscaping trees
Sulphur-crested Cockatoo <i>Cacatua sulphurea</i>	High	Flocks occur in woodlands, parklands and tree plantations	No likely effect	Small numbers may use landscaping trees
Pacific Black Duck <i>Anas superciliosa</i>	High	Small numbers occur in Lake Jerrabomberra and local ponds/dams	No likely effect	Disturbance may reduce use of pond on eastern boundary
European (Red) Fox <i>Vulpes vulpes</i>	High	Scats seen on JHS site, along Jerrabomberra Ck, on Environa Dr verge	Local foxes may investigate construction site at night	Fewer likely due to vegetation clearing but no effect on population near Airport
Silver Gull <i>Chroicocephalus novaehollandiae</i>	High (>9 birds) Moderate (<10)	Occasional at Lake Jerrabomberra	No likely effect	No likely effect
Yellow-tailed Black-Cockatoo <i>Calyptorhynchus funereus</i>	High	Small groups occur in forests and tree plantations	No likely effect	No likely effect unless many pine trees planted
Little Black Cormorant <i>Phalacrocorax sulcirostris</i>	High	Occasional at Lake Jerrabomberra	None, no habitat present	None, no habitat created or lost
Whistling Kite <i>Haliastur sphenurus</i>	High	Few records nearby, more around lower Jerrabomberra Ck and Lake Burley Griffin (ACT) 8-10km to NW	No likely effect	None, no habitat created or lost
Brown (European) Hare <i>Lepus capensis</i>	High	Some may be present in denser grasslands to the west	Less likely to occur due to vegetation clearing and human disturbance	Fewer likely due to vegetation clearing but no effect on population near Airport
Rock Dove (Feral Pigeon) <i>Columbia livia</i>	High (>9 birds) Moderate (<10)	Small numbers recorded at and near site	Flocks may visit for a short time after seeding of road and path verges	May increase, design of buildings could offer nesting spaces and playground feeding could occur
Magpie-lark <i>Grallina cyanoleuca</i>	Moderate	Small numbers occur throughout woodland, grassland, parkland, suburbs and playing fields	Small numbers could be attracted to feed in disturbed or flooded soil	Neutral - some could use landscaping trees but foraging habitat will be lost
White-faced Heron <i>Egretta novaehollandiae</i>	Moderate	Occasional around wetlands	Rare bird could be attracted to feed on disturbed or flooded soil	None, no habitat created or lost
Australian Kestrel <i>Falco cenchroides</i>	Moderate	Occasional in rural grasslands/pastures and woodlands	Less likely to occur due to vegetation clearing and human disturbance	Less likely to occur due to loss of foraging habitat

## 6. Mitigation measures

During the construction phase risks can be reduced by:

- Minimising ponding from interruptions to drainage by appropriate shaping, using silt barriers to facilitate drainage without erosion
- Ensuring that waste foodstuffs are not accessible to birds on the construction site by signage and provision of secure bins
- Using direct seeding rather than spray-grassing for planting verges of road, bus zone, drop-off area and paths.

During the operational phase risks can be reduced by:

- Limiting the use of trees which attract hazardous bird species and flying-foxes or replacing them with other species (final list should be checked by this consultant or another qualified person)
- Netting any animal-attracting fruiting trees in the productive garden to reduce attraction of Grey-headed Flying-foxes and Cockatoos
- Using secure bins for food waste (see photographs) that cannot be accessed by birds and animals. This also increases amenity and reduces health risks from flies and rodents
- Discouraging feeding of wildlife as part of the school's operational policy
- Reassessing building features that may allow nesting/roosting of Feral Pigeons and modifying them to prevent this. This will also improve health, safety and amenity by reducing use of the buildings by other introduced species such as Common Starling, Common Myna and House Sparrow.

## 7. References

- Atlas of Living Australia. At [Atlas of Living Australia – Open access to Australia’s biodiversity data \(ala.org.au\)](https://ala.org.au) . Accessed February 2022.
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Photograph 1. Part of flock of 30 Magpies feeding on recently graded soil at JHS site.



Photograph 2. Part of flock of 25 Wood Ducks at temporary pond and earth banks at construction site on Environa/Tompsitt Drive.





Photograph 3. Small group of Wood and Black Ducks in pond on eastern boundary of JHS site.



Photograph 4. Small group of Wood Ducks on David Madew playing fields adjacent to JHS site. (JHS project does not include additional playing fields)





Photograph 5. Jerrabomberra, secure bin at fast food outlet.



Photograph 6. Jerrabomberra, fast food outlet bin with contents accessible to wildlife.

Appendix 1. Risk ratings, records and potential for hazardous species at and around JHS site

Species	Risk rating (Canberra Airport)	Jerrabomberra HS site		Environa Drive		Playing fields		Lake Jerrabomberra		Jerrabomberra ponds		Surburban area		Surrounding pasture		Comments
		Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	
Galah (>9 birds)	Extreme										28	2				Development unlikely to increase risk (foraging areas removed)
Galah (<10 birds)	Very high	2					21			2						As above
Aust. Wood Duck	Very high			47		14	38	3	55	22	46			28		Development unlikely to increase risk (no ponds or irrigated grass areas added)
Straw- necked Ibis	Very high								6							Development unlikely to increase risk (no wet grassland areas added)
Wedge- tailed Eagle	Very high								2		1			1		Development will not increase risk (foraging area removed)
Little Eagle	Very high															Development will not increase risk (foraging area removed)
Grey- headed Flying-fox	Very high															Appropriate landscaping necessary to prevent increased risk.
Black Swan	High							3	6		2					Development will not increase risk (no wetlands or irrigated grasslands added)
Australasian Darter	High							9	3							Development will not increase risk (no wetlands added)
E Grey Kangaroo	High	✓		✓		✓						✓		✓		Not relevant (too far from airport, and existing habitat will be removed)
Wombat	High	✓		✓		✓						✓		✓		Not relevant (too far from airport, and existing habitat will be removed)
Great Cormorant	High								8							Development will not increase risk (no wetlands added)

## Appendix 1 (continued)

Species	Risk rating Canberra Airport	Jerrabomberra HS site		Enviroana Drive		Playing fields		Lake Jerrabomberra		Jerrabomberra ponds		Surburban area		Surrounding pasture		Comments
		Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	
Aust. White Ibis	High	6 (o/h)						1	150		1					Food waste control necessary during construction. Final development unlikely to increase risk (no grasslands/wetlands added). 150 on island and jetties at Lake Jerrabomberra June 2021, could become major roost.
Australian Magpie	High	31				2	9	5	20	1	9	1		3		Development unlikely to increase risk (some potential nest trees added but foraging areas removed)
Masked Lapwing	High						3	2	4	2	2					Development unlikely to increase risk (no additional short grassland)
Little Raven	High								7					7		Potential for attraction of small numbers during construction earthworks
Australian Raven	High					1	2		7		3			2		Potential for attraction of small numbers during construction earthworks or to exposed food waste.
Little Corella	High					1	4		50	72	68					Potential for trees in landscaping to support small numbers
Sulphur-crested Cockatoo	High						4	2	40	2	32					Potential for trees in landscaping to support small numbers
Pacific Black Duck	High	4					1	10	31	5	9					Development will not increase risk (no wetlands added)
European Red Fox	High	√		√										√		Not relevant (too far from airport)
Silver Gull (>9 birds)	High								30							Development will not increase risk (no habitat added)
Yellow-tailed Bk-Cockatoo	High															Development unlikely to increase risk (with appropriate landscaping)



## Appendix 1 (continued)

Species	Risk rating Canberra Airport	Jerrabomberra HS site		Enviroana Drive		Playing fields		Lake Jerrabomberra		Jerrabomberra ponds		Surburban area		Surrounding pasture		Comments
		Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	Feb-22	10 yr max	
Little Black Cormorant	High								52							Development will not increase risk (no wetlands added)
Whistling Kite	High															Development unlikely to increase risk (foraging areas removed)
European Hare	High															Not relevant (too far from airport, and existing habitat will be removed)
Feral Pigeon (>9 birds)	High															Potential for increased nesting and roosting on buildings, feeding by students. Will need appropriate controls.
Feral Pigeon (<10 birds)	Moderate	2							8		1					As above
Magpie-lark	Moderate	2				5	4	2	7	7	4	1		8		Development will not increase risk (no habitat added)
White- faced Heron	Moderate								2	1						Development will not increase risk (no wetlands or irrigated grasslands added)
Silver Gull (<10 birds)	Moderate															As for >9 Gulls above
Australian Kestrel	Moderate													1		Development will not increase risk (foraging area removed)