

## 3 Camp assessments

Camp context, history, ecological values, and sensitive receptors are provided for the three focal flying-fox camps. Sensitive receptors are those locations that host vulnerable people where risks need to be managed, including schools, childcare centres, hospitals with helipads, airports, and equine facilities. Identifying sensitive receptors is necessary with regards to any management actions that could inadvertently cause the camp to splinter to undesirable or sensitive locations surrounding the camp.

Management options for each camp, with consideration to this site-specific detail and legislation, are outlined in Section 4 with planned actions in Section 5.

### 3.1 Balgowlah camp

#### 3.1.1 Camp description

The Balgowlah camp is located between Burnt Bridge Deviation to the north and Balgowlah Road to the south (Figure 3). The eastern of the extent of the camp is bordered by residential properties on Balgowlah Road and Pitt St, with the western extent of the camp bordered by residential properties along Balgowlah Road. There are 45 residential dwellings (including unit blocks) within 50 m of the camp area.

The camp is located on Lots 7-8 DP776891 (Local Government Authority land) and Lots 1-2 DP1127989 (Freehold land). The land is classified as Public Recreation under the Manly Local Environment Plan 2013 (Table 2).

Table 2 Balgowlah camp context

Criteria	Attribute
Location	-33.789300, 151.262144
Lot and plan	Lot 7 DP 776891 Lot 8 DP 776891 Lot 1 DP 1127989 Lot 2 DP 1127989
Land zone	RE1 Public Recreation
Current land use	Parkland
Maximum confirmed camp extent	1.275 ha
Flying-fox usage	Permanent





**Figure 3: Balgowlah flying-fox camp**

Northern Beaches Council

Northern Beaches Flying fox Camp Management Plan

Camp extent May 2022

Maximum camp extent 2018-2022

Property boundary





### 3.1.2 Ecological values

Ecological values within 1 km of the Balgowlah flying-fox camp are shown in Figure 4. Camp habitat is mapped as non-native vegetation, though vegetation bordering the northern boundary of the camp is mapped as Sydney Coastal Sandstone Gully Forest (PCT ID 3595) (DPE 2022). The camp area is also mapped as a High Ecological Value (HEV) waterway (DPE 2019). There are no Threatened Ecological Communities (TEC) mapped within or near the camp extent (DPE 2021). However, a Protected Matters Search Tool (PMST) report listed that the following TECs are likely to or may occur within the camp extent:

- Coastal Swamp Oak (*Casuarina glauca*) Forest of NSW and Southeast Queensland ecological community – Endangered (E)
- Coastal Swamp Sclerophyll Forest of NSW and Southeast Queensland – E
- Coastal Upland Swamps in the Sydney Basin Bioregion – E
- Eastern Suburbs Banksia Scrub of the Sydney Region – Critically Endangered (CE)
- River-flat eucalypt forest on coastal floodplains of southern NSW and eastern Victoria – CE.

11 threatened species (including NSW and/or Commonwealth-listed species) have been recorded within 1 km of the camp within the last 20 years (ALA 2022, DPE 2022), including two bird species, one amphibian, one reptile, four mammals, and three plants:

- swift parrot (*Lathamus discolor*) – E (State), CE (Commonwealth)
- powerful owl (*Ninox strenua*) – V (State)
- eastern pygmy-possum (*Cercartetus nanus*) – V (State)
- grey-headed flying-fox – V (State and Commonwealth)
- southern myotis (*Myotis macropus*) – V (State)
- large bent-winged bat (*Miniopterus orianae oceanensis*) – V (State)
- Rosenberg's goanna (*Varanus rosenbergi*) – V (State)
- red-crowned toadlet (*Pseudophryne australis*) – V (State)
- nettled bottle brush (*Callistemon linearifolius*) – V (State)
- magenta lilly pilly (*Syzygium paniculatum*) – E (State), V (Commonwealth)
- Wallangarra white gum (*Eucalyptus scoparia*) – E (State), V (Commonwealth).

Additional threatened species that are likely to or may occur within 1 km of the camp are listed in a separate reference document; PMST Reports for the Northern Beaches Flying-fox CMP. The above list provides a preliminary assessment of threatened species recorded around the camp; however, a flora and fauna assessment should be undertaken to ground truth ecological values before any works occur on site.

The Balgowlah flying-fox camp is not currently listed as a nationally important flying-fox camp (see definition in Appendix 2). However, the camp has been seasonally occupied by 2,500 or more GHFF each consecutive year since 2013. Given that 2022 is the tenth year of this occupation, this camp should be treated as a nationally important camp.





#### Threatened species (Bionet 2022)

- Eastern Pygmy-possum
- Grey-headed Flying-fox
- Large Bent-winged Bat
- Netted Bottle Brush
- Powerful Owl

● Red-crowned Toadlet

- Southern Myotis
- Swift Parrot

#### Plant Community Type (PCT)

- Estuarine Swamp Oak Twig-rush Forest
- Southern Sydney Rockplate Heath

■ Sydney Coastal Coachwood Gallery Rainforest

■ Sydney Coastal Sandstone Bloodwood Shrub Forest

■ Sydney Coastal Sandstone Gully Forest

■ Woronora Plateau Heath-Mallee

Not native vegetation

**Figure 4: Balgowlah flying-fox camp ecological values**

Northern Beaches Council

Northern Beaches Flying fox Camp Management Plan

■ Camp extent May 2022

■ 1 km buffer

Job number: PR7197  
Revision: 0  
Author: EK  
Date: 15/07/2022



0 50 100 200  
Meters

GDA 1994 MGA Zone 56  
Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter



### 3.1.3 Camp history

#### **Flying-fox occupancy**

The Balgowlah camp established in 2010. This site was monitored by the Royal Botanic Gardens and Domain Trust (RBGDT) from 2010 until 2017, and is currently monitored by council staff as part of the quarterly National Flying-fox Census. Historically, numbers fluctuated seasonally between a few hundred to a thousand GHFF, with GHFF typically vacating the camp during winter months (Figure 5). GHFF began permanently roosting at the site in November 2012, with the number of GHFF typically fluctuating between 1,000 and 9,500 GHFF (Figure 5). Small numbers of BFF (up to 150 individuals) are present sporadically at the camp (Figure 5).

#### **Issues & management actions to date**

Communication between Council, residents, and the broader community is regular and ongoing regarding flying-fox related issues at the Balgowlah camp. The majority of resident/community enquiries have been regarding impacts experienced due to noise and faecal drop. Negative impacts experienced by residents generally increase when numbers of flying-foxes increase. Vandalism of educational signage is also an issue experienced at this camp.

Council has invested significantly into managing community impacts associated with the Balgowlah flying-fox camp. Some actions include:

- Developing a Camp Management Plan (Manly Council 2016) and obtaining DPE threatened species licences for delivery of the plan's actions.
- Selective removal of trees (including coral trees and she-oaks) to establish buffers on the western and eastern boundaries of the camp to minimise impacts to adjoining residents.
- Removal of invasive and hazardous trees along the creek line to the west of the camp to improve environmental values and public safety.
- Installation of educational signage around the camp.
- Delivery of the Flying-fox Residents Assistance Program to subsidise the purchasing of items and services that will reduce impacts for residents within 50 m of the camp. Subsidised items included air conditioners and purifiers, secondary glazing for windows, car wash services, cleaning equipment, balcony upgrades, and covers for outdoor items. The program received positive feedback from recipients, many of whom reported that the items had helped to reduce impacts.
- Planting advanced roost trees (including casuarinas) within the core camp area to increase habitat away from conflict areas.
- Weed removal and planting of a low-growing vegetative screen within the eastern buffer area.

- Providing information to residents and the broader community about living alongside flying-foxes.
- Delivery of interactive wildlife shows to allow the public to learn about flying-fox ecology.

Construction for the new Beaches Link tunnel (entrance approximately 750 m from the camp) was scheduled to commence in 2023, though this has been delayed indefinitely by Infrastructure NSW (Kidd & Cornish 2022). Should project planning re-commence, construction work is likely to draw water from the camp reserve stream and will likely increase construction noise in the camp, potentially leading to impacts on the camp and increased conflict with nearby residents. Impact avoidance measures will be required as part of this project.

### **Sensitive receptors**

Sensitive receptors within a 1 km radius of the Balgowlah camp are depicted in Figure 6.

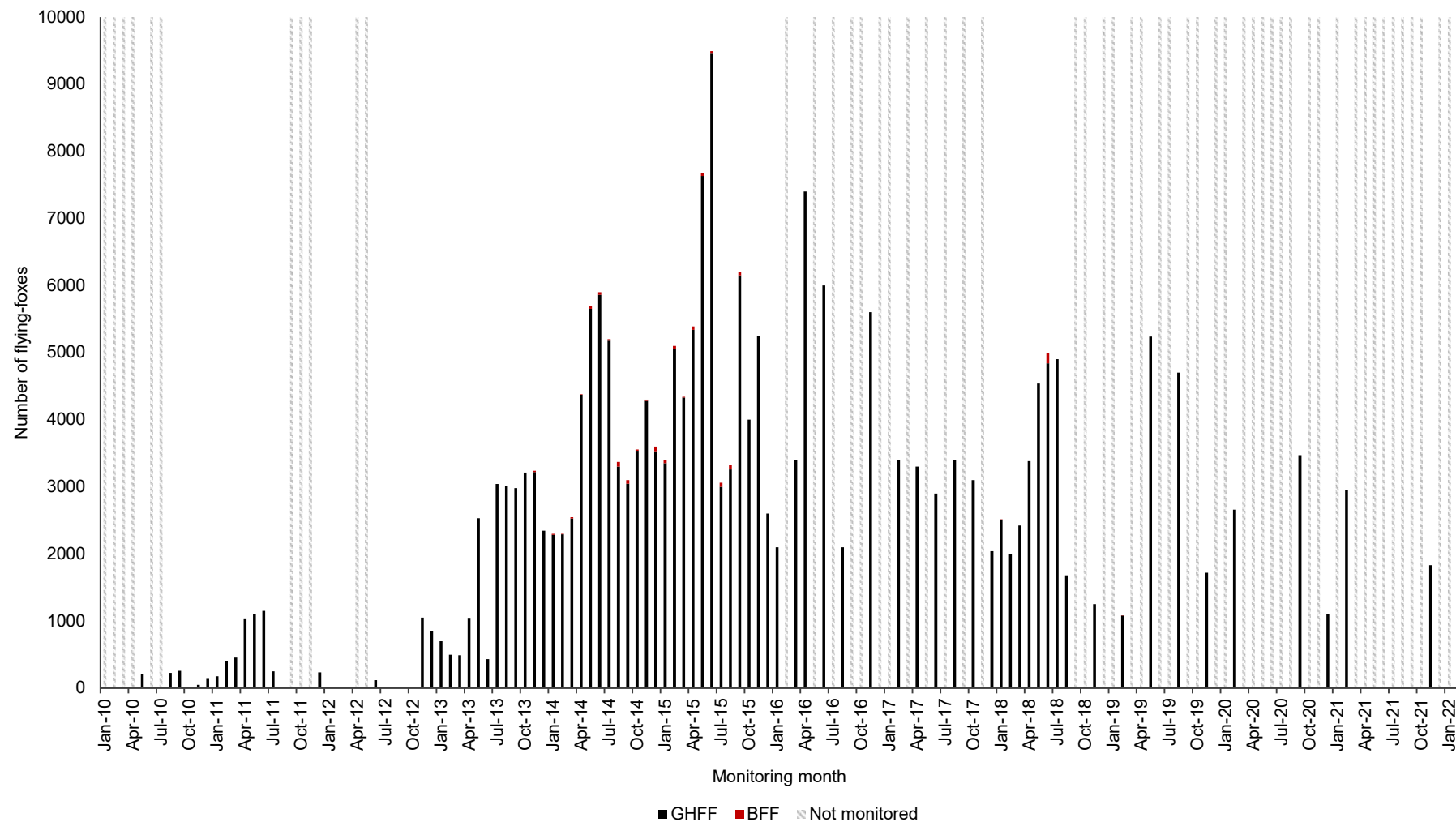
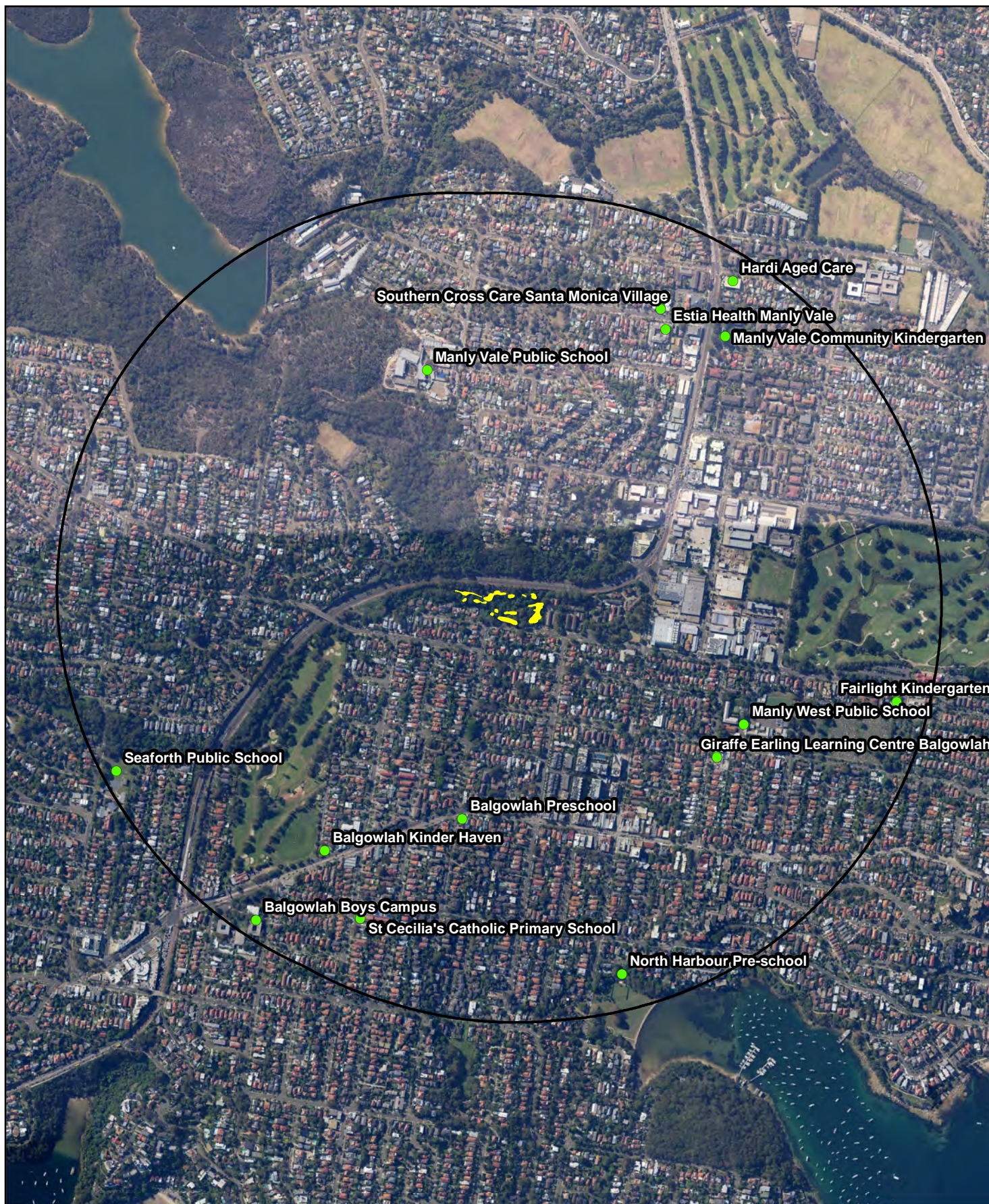


Figure 5 Historical flying-fox camp counts at the Balgowlah camp (Source: Council, Ecosure, RBGDT).

\* Note, in months where two counts were undertaken, this graph shows the average count (i.e. Oct 2014, Nov 2015, Oct 2017, Jun 2018).





**Figure 6: Sensitive receptors around Balgowlah camp**

Northern Beaches Council

Northern Beaches Flying fox Camp Management Plan

● Sensitive receptor

■ Camp extent May 2022

□ 1 km buffer





## 3.2 Avalon camp

### 3.2.1 Camp description

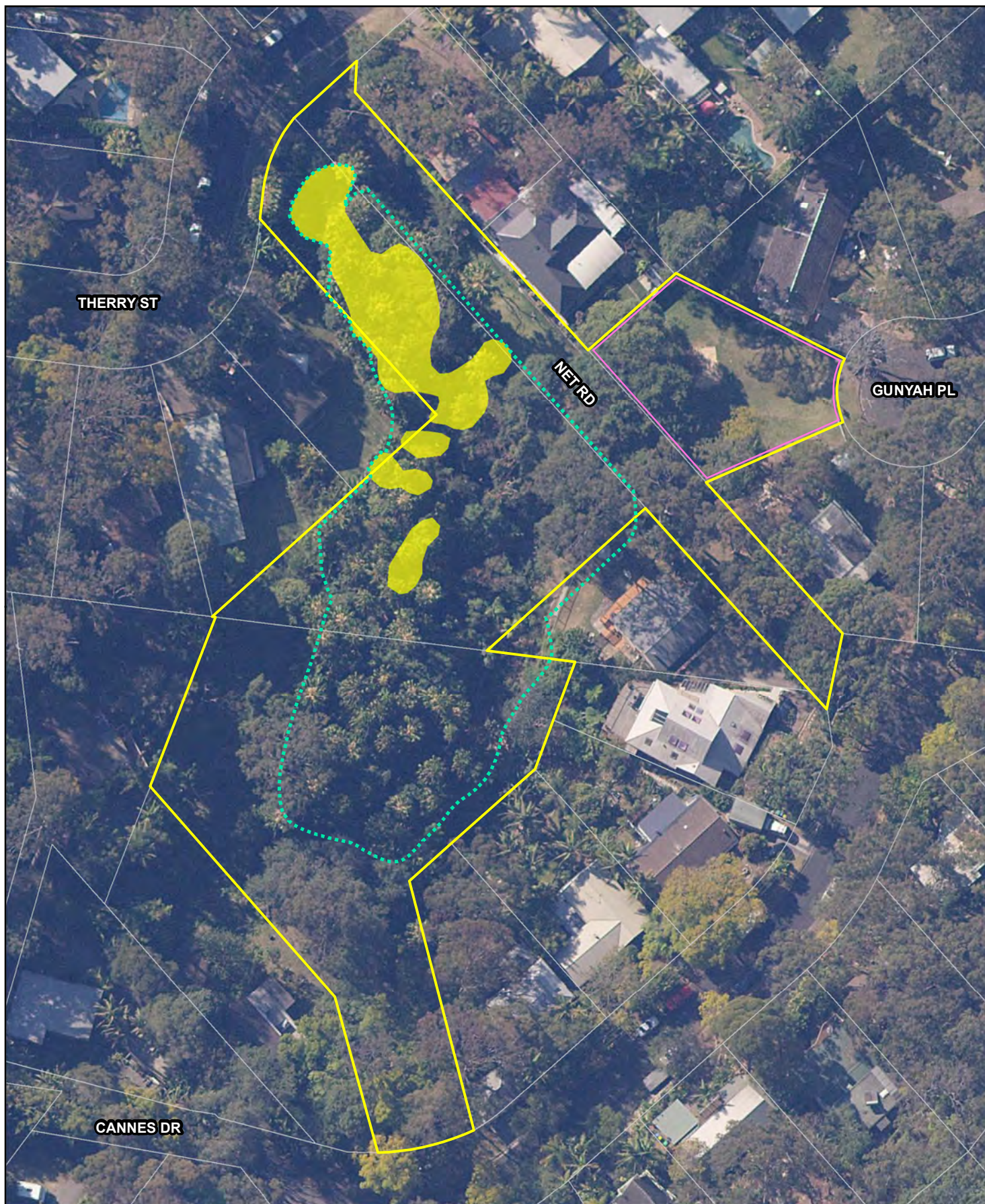
The Avalon camp is located adjacent to residential properties, with Therry Street to the north of the camp, Cannes Drive to the south of the camp, and properties along Therry Street bordering the east and west of the camp (Figure 7). There are 12 residential properties within 50 m of the camp area. Roosting flying-foxes occasionally spill over to the adjoining Gunyah Place Reserve (Lot 4 DP 232257, Figure 7), which is undesirable due to a playground at this location.

The camp is located on Lot 18 DP 236595 (Freehold land) and Lot 2 DP 209493 (Freehold land). The land is classified as Public Recreation under the Pittwater Local Environmental Plan 2014 (Table 3).

Table 3 Avalon camp context

Criteria	Attribute
Location	-33.625430, 151.324546
Lot and plan	Lot 18 DP 236595 Lot 2 DP 209493
Land zone	RE1 Public Recreation
Current land use	Parkland
Maximum confirmed camp extent	0.341 ha
Flying-fox usage	Permanent










**Figure 7: Avalon flying-fox camp**

Northern Beaches Council

Northern Beaches Flying fox Camp Management Plan

- |   |                      |   |                               |
|---|----------------------|---|-------------------------------|
|  | Camp extent May 2022 |  | Cannes Reserve                |
|  | Maximum camp extent  |  | Gunyah Place Reserve parkland |
|  | Property boundary    |   |                               |





### 3.2.2 Ecological values

Ecological values found within 1 km of the Avalon flying-fox camp are depicted in Figure 8. The camp habitat is mapped as Sydney Coastal Lilly Pilly-Palm Gallery Rainforest (PCT ID 3039) and Hunter Coast Lowland Spotted Gum Moist Forest (PCT ID 3234) (DPE 2022). The camp is also mapped as a HEV waterway (DPE 2019). TEC mapping shows the camp habitat consists of two TECs; Coastal Escarpment Littoral Rainforest (E) and Pittwater Spotted Gum Forest (E) (DPE 2021). A PMST report also listed that the following TECs may occur within the camp extent:

- Coastal Swamp Oak Forest of NSW and Southeast Queensland ecological community (E)
- Coastal Swamp Sclerophyll Forest of NSW and Southeast Queensland – E
- Coastal Upland Swamps in the Sydney Basin Bioregion – E
- Eastern Suburbs Banksia Scrub of the Sydney Region –CE
- River-flat eucalypt forest on coastal floodplains of southern NSW and eastern Victoria – CE.

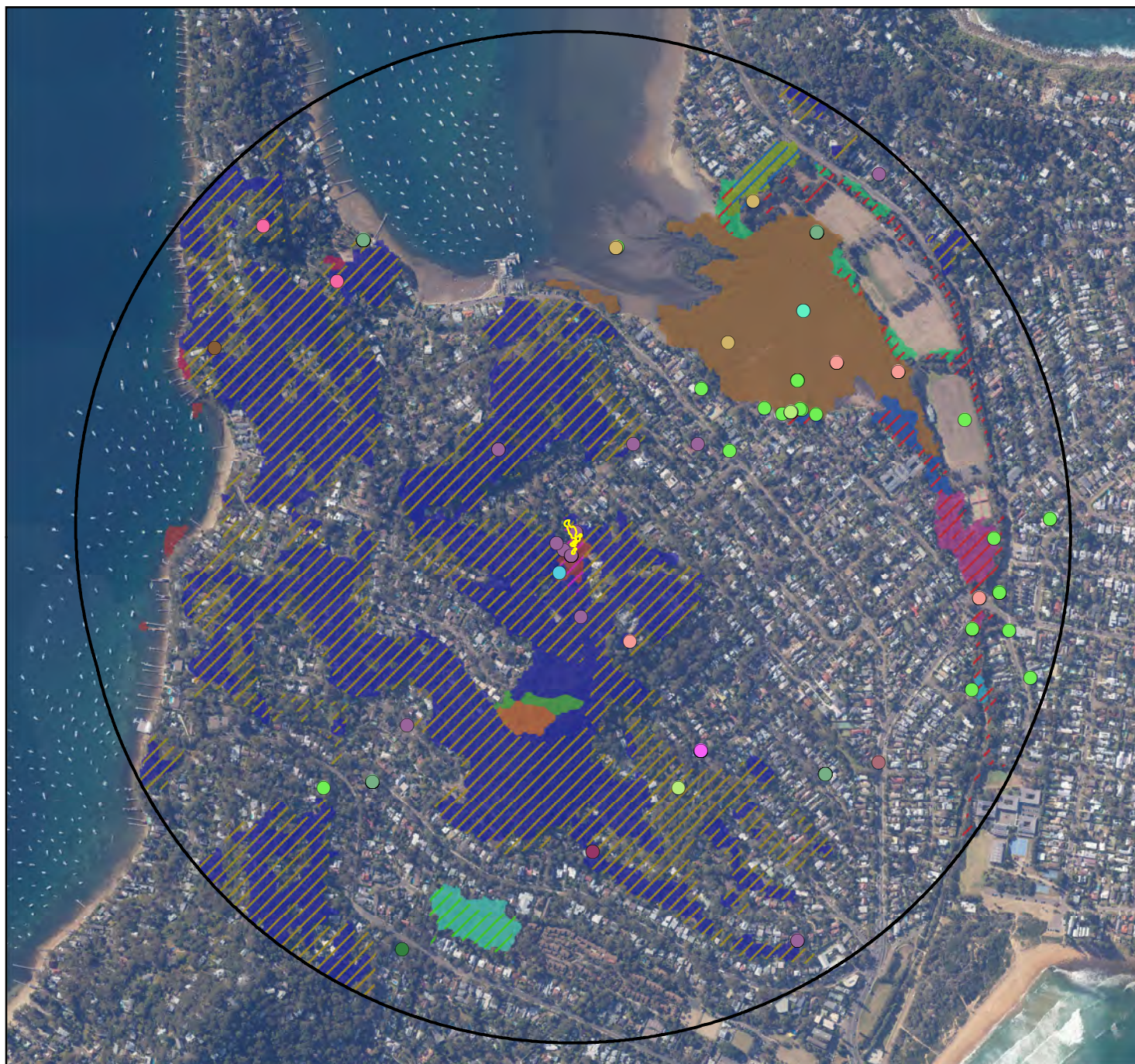
25 threatened species (including NSW and/or Commonwealth-listed species) have been recorded within 1 km of the camp within the last 20 years (ALA 2022, DPE 2022), including ten bird species, one amphibian, 11 mammals, and three plants:

- beach stone-curlew (*Esacus magnirostris*) – CE (State)
- bush stone-curlew (*Burhinus grallarius*) – E (State)
- eastern curlew (*Numenius madagascariensis*) – CE (Commonwealth)
- masked owl (*Tyto novaehollandiae*) – V (State)
- powerful owl – V (State)
- rose-crowned fruit-dove (*Ptilinopus regina*) – V (State)
- sooty oystercatcher (*Haematopus fuliginosus*) – V (State)
- sooty tern (*Onychoprion fuscata*) – V (State)
- turquoise parrot (*Neophema pulchella*) – V (State)
- white-bellied sea-eagle (*Haliaeetus leucogaster*) – V (State)
- red-crowned toadlet – V (State)
- eastern cave bat (*Vespadelus troughtoni*) – V (State)
- eastern coastal free-tailed bat (*Micronomus norfolkensis*) - V (State)
- eastern pygmy-possum – V (State)
- greater broad-nosed bat (*Scoteanax rueppellii*) – V (State)
- grey-headed flying-fox – V (State and Commonwealth)
- koala (*Phascolarctos cinereus*) – Endangered (E) (State and Commonwealth)



- large bent-winged bat – V (State)
- large-eared pied bat (*Chalinolobus dwyeri*) – V (State and Commonwealth)
- little bent-winged bat (*Miniopterus australis*) – V (State)
- southern myotis – V (State)
- squirrel glider (*Petaurus norfolcensis*) – V (State)
- anthraxon (*Arthraxon hispidus*) – V (State)
- macadamia nut (*Macadamia integrifolia*) – V (Commonwealth)
- magenta lilly pilly (*Syzygium paniculatum*) – E (State), V (Commonwealth).

Note, the 1 km buffer around the camp encompasses marine and coastal ecosystems that provide habitat for some of the species listed above, such as the bush stone-curlew, eastern curlew, sooty oystercatcher, and sooty tern. The Avalon flying-fox camp habitat is not suitable for these species. Additional threatened species that are likely to or may occur within 1 km of the camp are listed in a separate reference document; PMST Reports for the Northern Beaches Flying-fox CMP. The above list provides a preliminary assessment of threatened species recorded around the camp; however, a flora and fauna assessment should be undertaken to ground truth ecological values before any works occur on site. This camp does not meet the criteria to be listed as a nationally important camp (see definition in Appendix 2).



#### Threatened species (Bionet 2022)

- Beach Stone-curlew
- Bush Stone-curlew
- Eastern Cave Bat
- Eastern Coastal Free-tailed Bat
- Eastern Curlew
- Eastern Pygmy-possum
- Greater Broad-nosed Bat
- Grey-headed Flying-fox
- Koala
- Large Bent-winged Bat
- Large-eared Pied Bat
- Little Bent-winged Bat
- Macadamia Nut
- Magenta Lilly Pilly

#### Threatened species (Bionet 2022)

- Powerful Owl
- Red-crowned Toadlet
- Rose-crowned Fruit-Dove
- Sooty Oystercatcher
- Southern Myotis
- Squirrel Glider
- Turquoise Parrot
- White-bellied Sea-Eagle

#### Threatened Ecological Communities

- Coastal Alluvial Bangalay Forest
- Coastal Flats Swamp Mahogany Forest
- Estuarine Swamp Oak Forest
- S\_RF07: Coastal Escarpment Littoral Rainforest
- S\_WSF11: Pittwater Spotted Gum Forest

#### Plant Community Type (PCT)

- Coastal Alluvial Bangalay Forest
- Coastal Sands Littoral Scrub-Forest
- Estuarine Swamp Oak Twig-rush Forest
- Estuarine Swamp Oak-Mangrove Forest
- Grey Mangrove-River Mangrove Forest
- Hunter Coast Foothills Apple Forest
- Hunter Coast Lowland Spotted Gum Moist Forest
- Northern Paperbark-Swamp Mahogany Saw-sedge Forest
- Sydney Coastal Enriched Sandstone Forest
- Sydney Coastal Lilly Pilly-Palm Gallery Rainforest
- Sydney Coastal Sandstone Bloodwood Shrub Forest
- Sydney Coastal Sandstone Foreshores Forest
- Not native vegetation

**Figure 8: Avalon flying-fox camp ecological values**

Northern Beaches Council

Northern Beaches Flying fox Camp Management Plan

Camp extent May 2022

1 km buffer

Job number: PR7197  
Revision: 0  
Author: EK  
Date: 15/07/2022



0 50 100 200  
Meters

GDA 1994 MGA Zone 56  
Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter



### 3.2.3 Camp history

#### **Flying-fox occupancy**

The Avalon camp was first recorded around approximately 2004, though relatively consistent occupancy has been recorded since 2011. Numbers typically fluctuate between 180 and 800 GHFF (Figure 9). There have been two unusually large influxes in winter 2013 and winter 2014 which resulted in a peak of more than 3,000. This was likely associated with an uncommon flowering event in the area and may have been spill over from another camp in the area.

#### **Issues & management actions to date**

Council has invested significantly into managing community impacts associated with the Avalon camp. Some actions include:

- developing a CMP (Pittwater Council 2015) and obtaining DPE threatened species licenses for delivery of the plan's actions
- facilitating regular community meetings and establishing a resident working group to assist in development of the CMP
- establishing buffers along the reserve boundaries to minimise impacts to adjoining residents, including removal of exotic trees and removal of lower fronds on Cabbage Tree Palms within the buffer ('pineapple pruning')
- replanting of roosting habitat to increase habitat outside of conflict areas
- planting of Bolwarra (*Eupomatia laurina*) as a visual and odour buffer between the camp and impacted residents
- revegetation and removal of weeds and invasive and hazardous trees to improve environmental values and public safety
- delivery of the Flying-fox Residents Assistance Program to subsidise the purchasing of items and services that will reduce impacts for residents within 50 m of the camp
- providing information to residents and the broader community about living alongside flying-foxes
- delivery of interactive wildlife shows to allow the public to learn about flying-fox ecology
- flying-fox dispersal in July 2015 (camp re-established and dispersal disbanded).

#### **Sensitive receptors**

Sensitive receptors within 1 km of the Avalon camp are depicted in Figure 10.

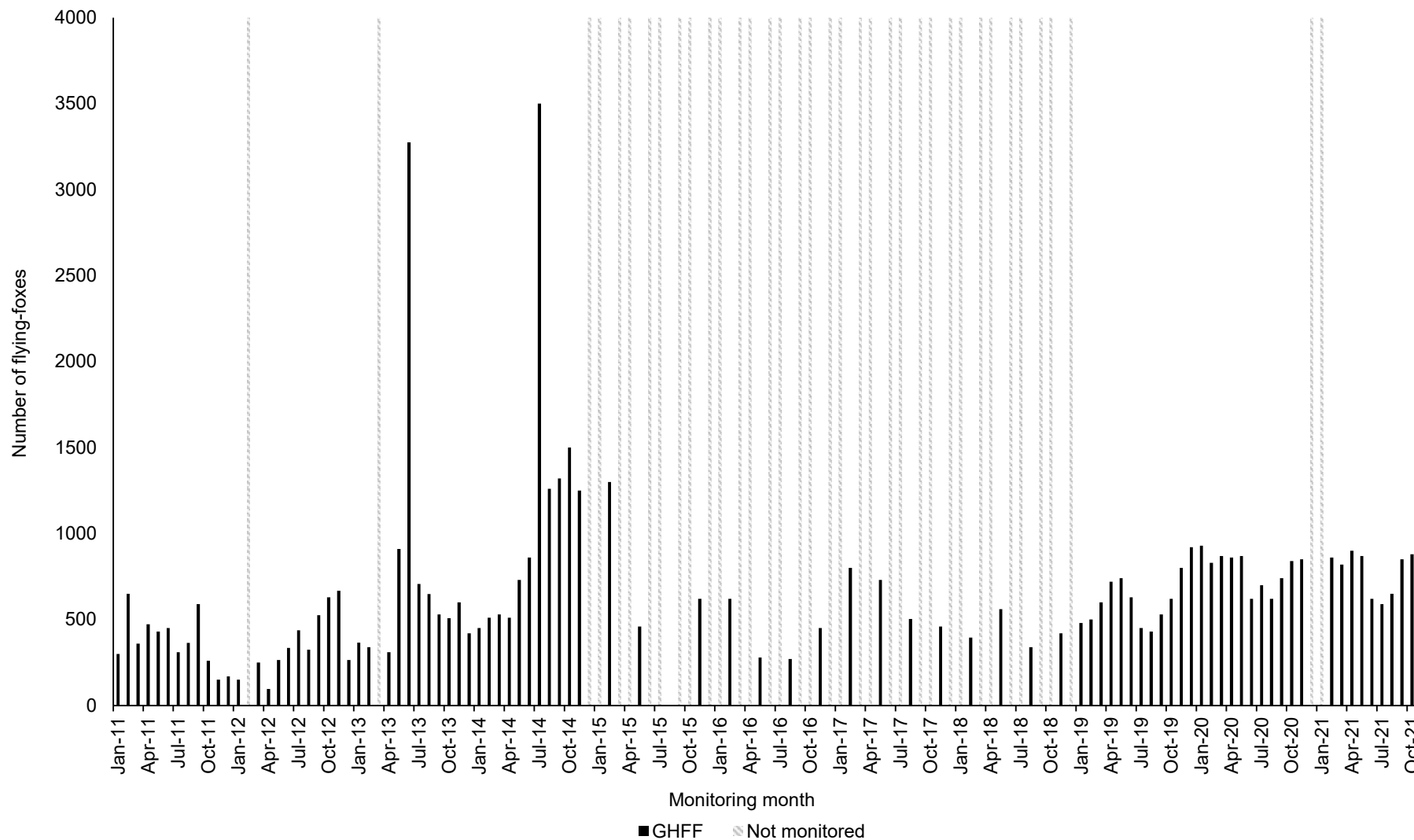


Figure 9 Historical flying-fox camp counts at the Avalon camp (Source: The National Flying-fox Monitoring Program [NFFMP] and Council)





**Figure 10: Sensitive receptors around Avalon camp**

Northern Beaches Council

Northern Beaches Flying fox Camp Management Plan

● Sensitive receptor

■ Camp extent May 2022

□ 1 km buffer





## 3.3 Warriewood camp

### 3.3.1 Camp description

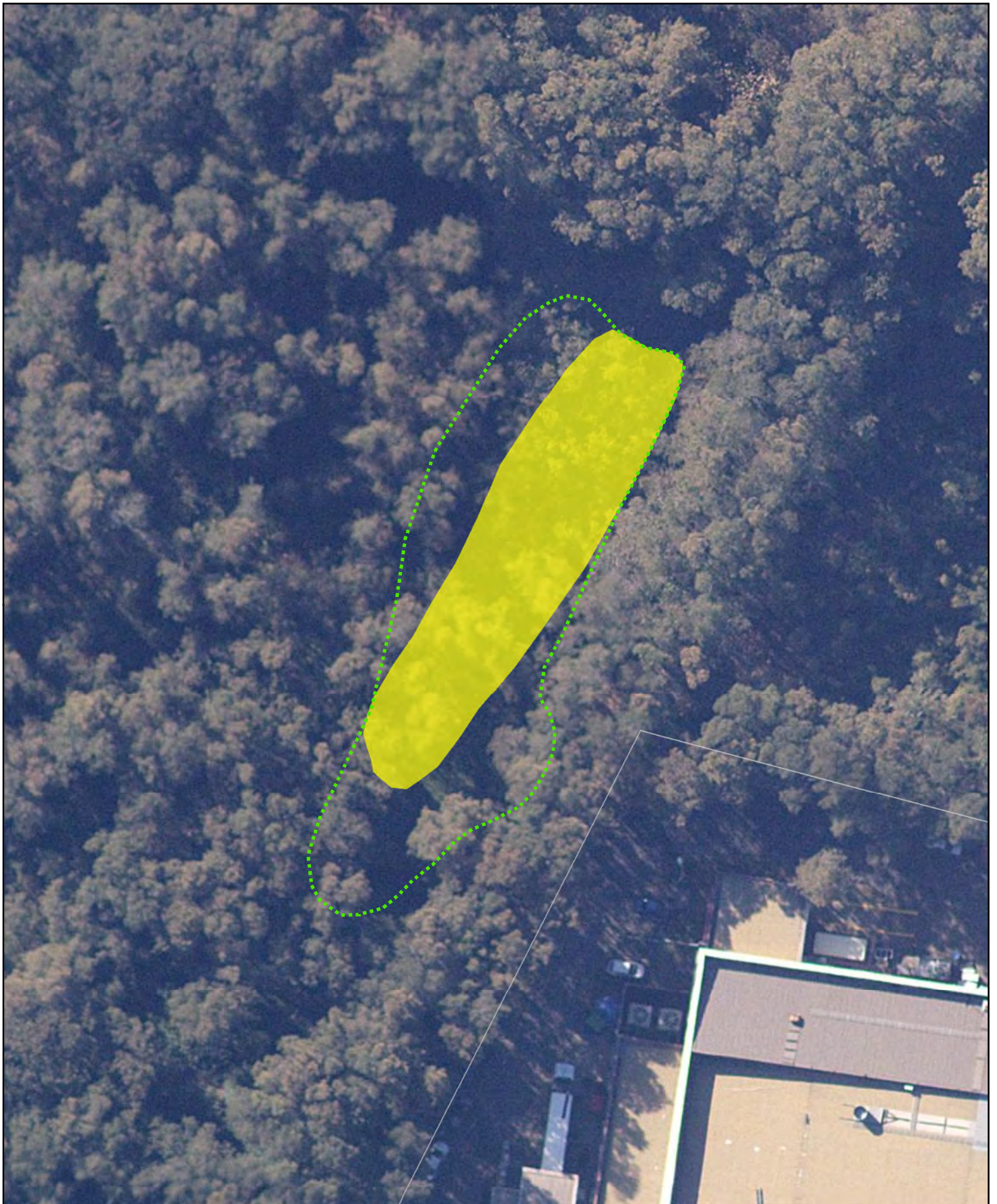
The Warriewood camp is located in the eastern extent of the Warriewood Wetlands (Figure 11). The camp is adjacent to the north-west of Warriewood Square, along Angus Gordon Walkway. The closest residential properties to this camp are more than 200 m away.

The camp is located on Lot 100 DP 1127710 (Local Government Authority land). The land is classified as Public Recreation under the Pittwater Local Environmental Plan 2014 (Table 4).

Table 4 Warriewood camp context

Criteria	Attribute
Location	-33.694334, 151.295272
Lot and plan	Lot 100 DP 1127710
Land zone	C2 Environmental Conservation
Current land use	Reserve
Maximum confirmed camp extent	0.147 ha
Flying-fox usage	Seasonal





**Figure 11: Warriewood flying-fox camp**

Northern Beaches Council

Northern Beaches Flying fox Camp Management Plan

- Camp extent May 2022
- Approximate maximum camp extent
- Property boundary



### 3.3.2 Ecological values

Ecological values found within 1 km of the Warriewood flying-fox camp are depicted in Figure 12. The camp habitat is mapped as Northern Paperbark-Swamp Mahogany Saw-sedge Forest (PCT ID 4006) (DPE 2022), and the Warriewood Wetlands are classed as a HEV waterway (DPE 2019). There are no TECs mapped within the camp extent, though there are three TECs within 100 m of the camp boundary (DPE 2021): Coastal Freshwater Wetland (E), Coastal Swamp Paperbark-Swamp Oak Scrub (E), and Coastal Flats Swamp Mahogany Forest (E) (DPE 2021). A PMST report also listed that the following TECs are likely to or may occur within the camp extent:

- Coastal Swamp Oak Forest of NSW and Southeast Queensland ecological community - E
- Coastal Upland Swamps in the Sydney Basin Bioregion – E
- Eastern Suburbs Banksia Scrub of the Sydney Region – CE
- River-flat eucalypt forest on coastal floodplains of southern NSW and eastern Victoria – CE.

23 threatened species (including NSW and/or Commonwealth-listed species) have been recorded within 1 km of the camp within the last 20 years (ALA 2022, DPE 2022), including 13 bird species, eight mammals, and two plants:

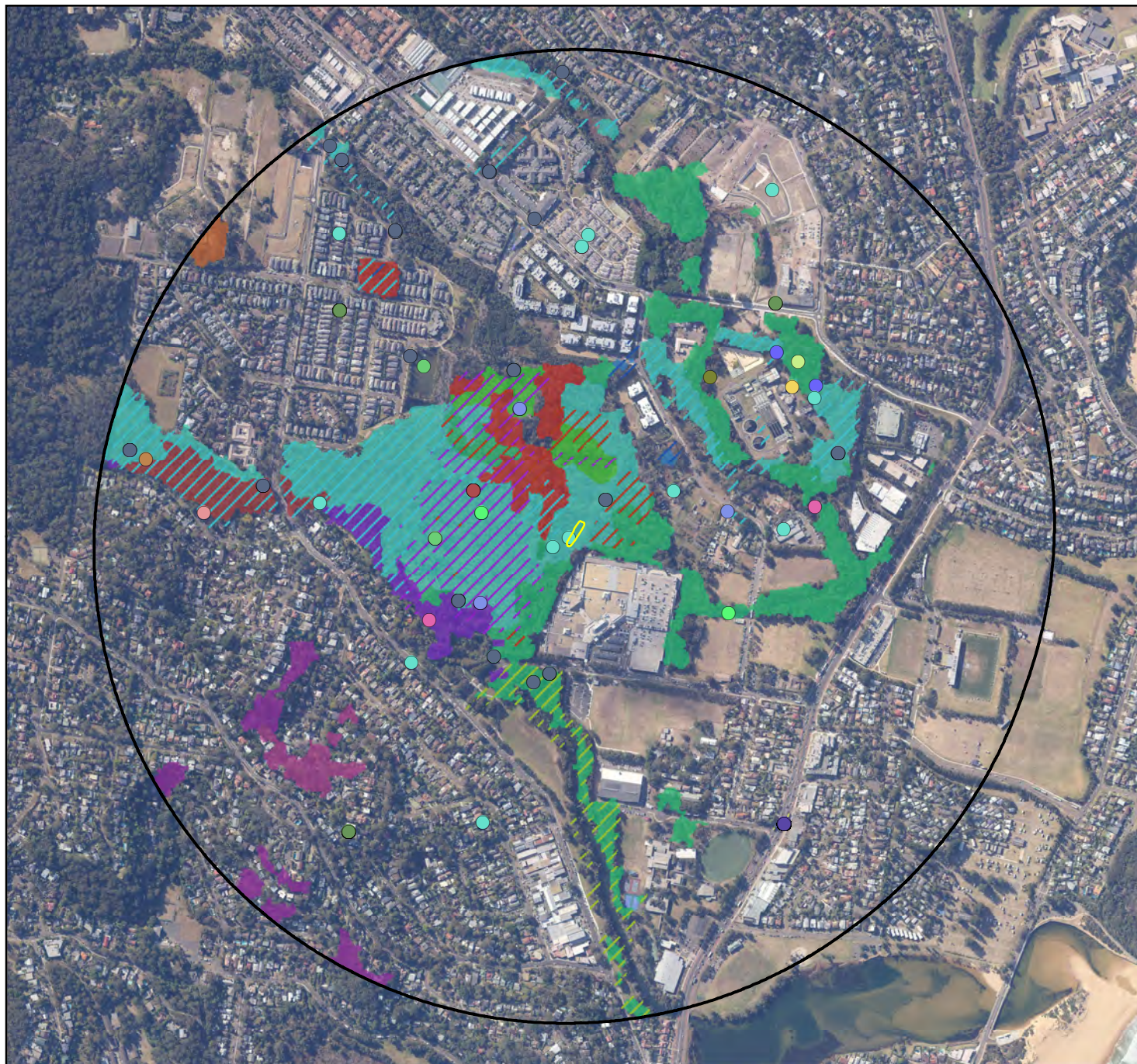
- superb fruit-dove (*Ptilinopus superbus*) – V (State)
- white-throated needletail (*Hirundapus caudacutus*) – V (Commonwealth)
- black bittern (*Ixobrychus flavicollis*) – V (State)
- white-bellied sea-eagle – V (State)
- eastern osprey – V (State)
- Australian painted snipe (*Rostratula australis*) – E (State and Commonwealth)
- glossy black-cockatoo (*Calyptorhynchus lathami*) – V (State)
- little lorikeet (*Glossopsitta pusilla*) – V (State)
- swift parrot – E (State), Critically Endangered (CE) (Commonwealth)
- barking owl (*Ninox connivens*) – V (State)
- powerful owl – V (State)
- regent honeyeater (*Anthochaera phrygia*) – CE (State and Commonwealth)
- varied sittella (*Daphoenositta chrysoptera*) – V (State)
- squirrel glider – V (State)
- grey-headed flying-fox – V (State and Commonwealth)
- eastern coastal free-tailed bat – V (State)
- large-eared pied bat – V (State and Commonwealth)



- southern myotis – V (State)
- eastern cave bat – V (State)
- little bent-winged bat – V (State)
- large bent-winged bat – V (State)
- Bauer's midge orchid (*Genoplesium baueri*) – E (State and Commonwealth)
- Angus's onion orchid (*Microtis angusii*) – E (State and Commonwealth).

Additional threatened species that are likely to or may occur within 1 km of the camp are listed in a separate reference document; PMST Reports for the Northern Beaches Flying-fox CMP. The above list provides a preliminary assessment of threatened species recorded around the camp; however, a flora and fauna assessment should be undertaken to ground truth ecological values before any works occur on site. This camp does not meet the criteria to be listed as a nationally important camp (see definition in Appendix 2).





#### Threatened species (Bionet 2022)

- Angus's Onion Orchid
- Australian Painted Snipe
- Barking Owl
- Bauer's Midge Orchid
- Black Bittern
- Eastern Cave Bat
- Eastern Coastal Free-tailed Bat
- Eastern Osprey
- Glossy Black-Cockatoo
- Grey-headed Flying-fox
- Large Bent-winged Bat
- Large-eared Pied Bat
- Little Bent-winged Bat
- Little Lorikeet

#### Threatened species (Bionet 2022)

- Powerful Owl
- Regent Honeyeater
- Southern Myotis
- Squirrel Glider
- Superb Fruit-Dove
- Swift Parrot
- Varied Sittella
- White-bellied Sea-Eagle
- White-throated Needletail

#### Threatened Ecological Communities

- ▨ Coastal Flats Swamp Mahogany Forest
- ▨ Coastal Freshwater Wetland
- ▨ Coastal Swamp Paperbark-Swamp Oak Scrub
- ▨ Estuarine Swamp Oak Forest
- ▨ S\_DS21: Coastal Sand Bangalay Forest

#### Plant Community Type (PCT)

- ▨ Blue Gum High Forest
- ▨ Coastal Sands Swamp Mahogany Rush Forest
- ▨ Estuarine Swamp Oak Twig-rush Forest
- ▨ Hunter Coast Sandplain Sedge Paperbark Wetland
- ▨ Northern Paperbark-Swamp Mahogany Saw-sedge Forest
- ▨ South Coast Sands Littoral Scrub
- ▨ Sydney Coastal Coachwood Gallery Rainforest
- ▨ Sydney Coastal Enriched Sandstone Forest
- ▨ Sydney Coastal Lilly Pilly-Palm Gallery Rainforest
- ▨ Sydney Coastal Sandstone Foreshores Forest
- ▨ Not native vegetation

**Figure 12: Warriewood flying-fox camp ecological values**

Northern Beaches Council

Northern Beaches Flying fox Camp Management Plan

▨ Camp extent May 2022

▨ 1 km buffer

Job number: PR7197  
Revision: 0  
Author: EK  
Date: 15/07/2022



0 50 100 200  
Meters

GDA 1994 MGA Zone 56  
Projection: Transverse Mercator  
Datum: GDA 1994  
Units: Meter



### 3.3.3 Camp history

#### **Flying-fox occupancy**

The Warriewood camp was first recorded in November 2012. It has experienced three large influxes in May 2014, 2018, and 2019 (Figure 13). The Warriewood camp typically empties around June (Council pers coms. 2022), likely due to cold winds at this site at this time, with at least some flying-foxes suspected to relocate to Avalon and Balgowlah camps which tend to increase around this time. Notably, flying-foxes remained at the camp in July for the first time in 2021 (Figure 13).

#### **Issues & management actions to date**

The Warriewood camp has required less management intervention from Council compared to Avalon and Balgowlah, primarily due to the fact that there are no residents directly adjacent to the camp and it is less frequently occupied. During a heat stress event in 2019, Council closed the walkway under the camp to limit further stress to flying-foxes and prevent direct contact between people and flying-foxes. Some pruning of vegetation above the walkway has been undertaken to limit flying-foxes from roosting in overhanging trees. In addition, Woolworths will soon commence pruning casuarina trees along the road adjacent to the camp. There have been some customer enquiries regarding flying-fox odour inside the Woolworths precinct, likely a result of the air conditioning vent being located adjacent to the flying-fox camp.

#### **Sensitive receptors**

Sensitive receptors within 1 km of the Warriewood camp are depicted in Figure 14.

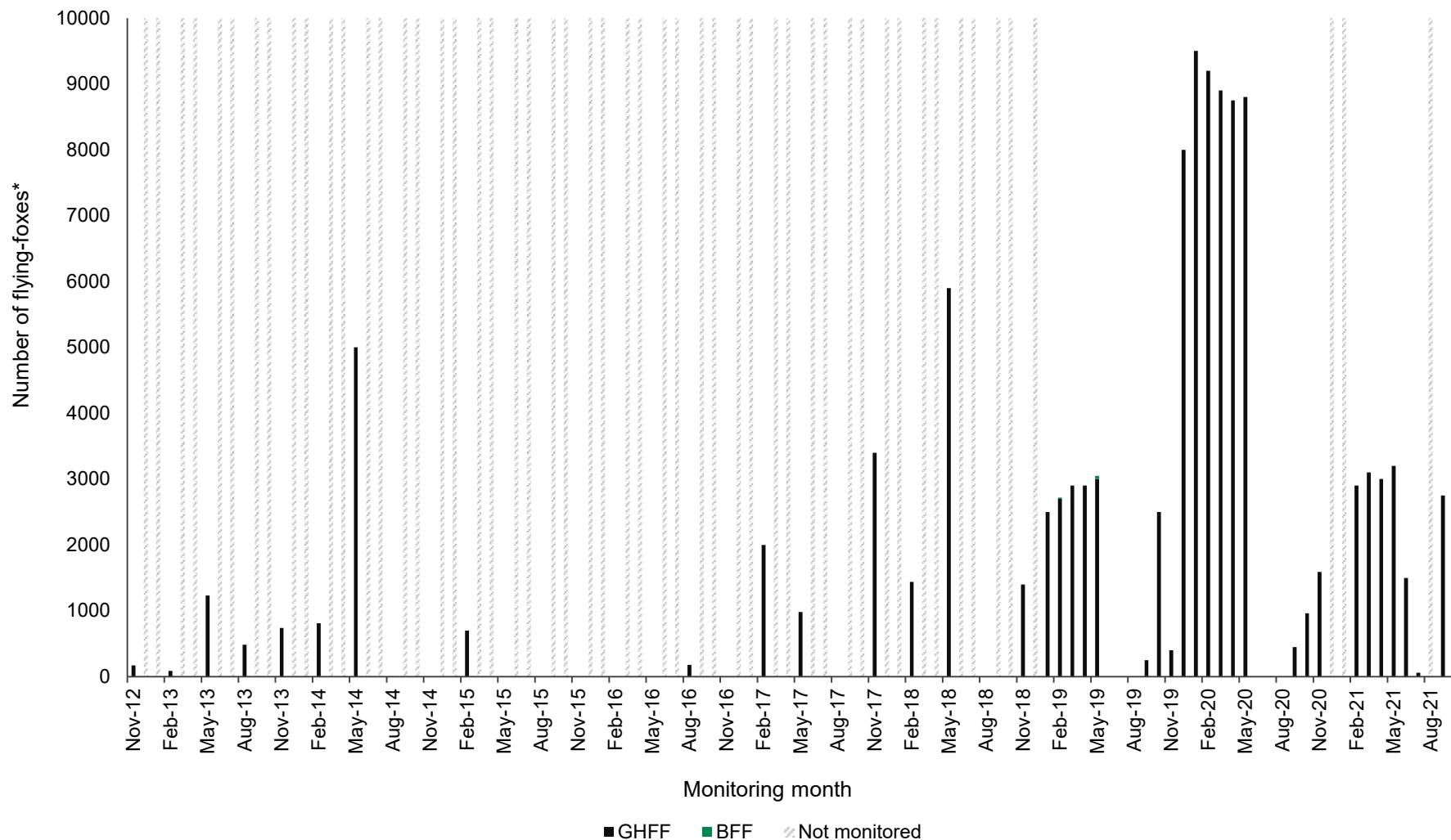
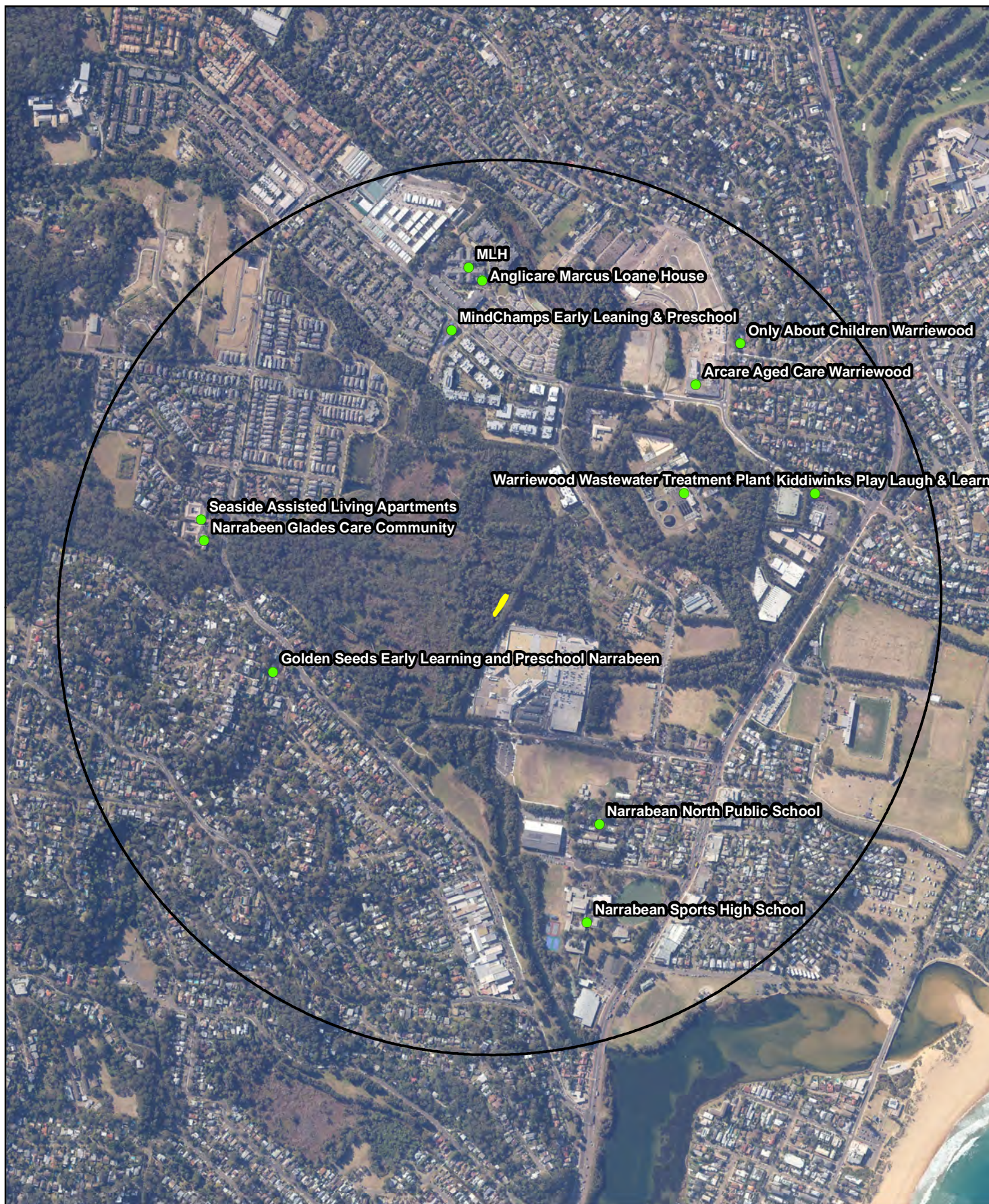


Figure 13 Historical flying-fox camp counts at the Warriewood camp (Source: NFFMP)

\* Due to data limitations, two records of BFF (< 500 individuals) in Feb 2018 and Nov 2019 have not been included in this graph as the estimated counts are not available.





**Figure 14: Sensitive receptors around Warriewood camp**

Northern Beaches Council

Northern Beaches Flying fox Camp Management Plan

- Sensitive site
- Camp extent May
- 1 km buffer

