

Supplement to - Kirrawee Brick Pit – Microbat & Flying-fox Monitoring Report

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1. Background

Council staff conducted a round of monitoring of use of the temporary ponds on the brick pit site in June 2017. The results of this monitoring were reported in Kirrawee Brick Pit – Microbat & Flying-fox Monitoring Report, June 2017. This reported noted:

Please note that the field work was conducted at an unfortunate time to assess the use of this temporary water body by microbats & flying-foxes. The nearest flying-fox camp at Kareela was abandoned at the time of the survey; Flying-foxes roosting at Kareela are the most likely to use the Brickpit site as Kareela is 1.5km away and other camps within the Sutherland Shire are between 3.5 and 8km away from the Brickpit and have freshwater bodies closer to them. In addition, during the period of monitoring, the temperature dropped well below minimum temperatures for microbats to be expected to be active. The presence of cranes and construction activities may also make the site less suitable for bats and flying-foxes to forage or use the temporary pond for drinking.

Since this time Grey-headed Flying Fox have returned to the Kareela camp, and at the time of reporting contained approximately 6,000 individuals. In addition to this approximately 1,500 Grey-headed Flying Fox were also present at the Camellia Gardens camp. As these camps now contained significant numbers of bats, and weather conditions were more conducive to bat activity, in accordance with the recommendations of this earlier report an additional round of monitoring was undertaken at the brick pit site.

2. Scope of Works

Sutherland Shire Council's Principal Environmental Scientist was engaged to monitor the activity of bats and flying-foxes at Kirrawee Brick Pit located at 566-594 Princes Highway Kirrawee NSW. The site, with a focus on the sedimentation pond, was monitored for flying-fox and bat activity in relation to the temporary sedimentation pond installed at the site. See Figure 1 Aerial photograph below for approximate size and location of the current temporary sediment detention pond shown in blue. Note the location of this pond had changed since the initial monitoring round in June 2017.



Figure 1 – Aerial Photograph (2016) of the site with approximate size and location of the current sedimentation pond shown in blue on the western edge of the site. Note the site does not currently look like this as the aerial photo is out of date.

3. Background

Council previously reported on the use of the site by both Flying Fox and microbats in June 2017. This current report provides further information on usage of the site by these species.

Since the initial report, there have been changes to both flying-fox numbers within the Shire and development on the site.

Approximately 6,000 Grey-headed Flying Fox are now present in the Kareela camp (approximately 1.6km from the brick pit) and approximately 1,500 Grey-headed Flying Fox present within the Camellia Gardens Camp (approximately 3.8km from the brick pit).

Conditions on the site have also changed significantly with the location of the pond changed due to progress of site works. However the main change has been a significant increase in the height of the buildings surrounding the temporary water body and the proposed park. Immediately to the north of the park and water body, the height of the building has increased from

approximately 4 storeys to approximately 10 stories. This building is currently approved for 14 stories. This increase in height has significantly impacted on the ability of flying foxes to access the temporary water body and park, particularly by direct flight from the Kareela camp. Building height has also increased significantly to the east of the temporary water body. This area is now approximately 6 stories high, with 14 stories approved. This also significantly impacts on flying-fox ability to access the temporary water body (see photo on front/cover page).

The area of retained habitat has also been significantly reduced due to vegetation clearance for road widening works on Oak Road. This results in reduced feeding resources for flying fox and reduced habitat for microbats.

4. Methodology

Environmental Science staff attended the Brickpit site on 28 November 2017 to monitor and record site usage by a range of fauna. Observations were undertaken between 7:00 pm and 9:00pm (sunset was 7:48pm). Weather during this time was mild (approx. 24 degrees) slightly overcast, with light SE winds. A combination of static observation of the temporary pond and active spotlighting around the perimeter of the bushland remnant was undertaken during this time.

Conditions were considered suitable for bat activity and observation. From the main vantage point observations could be made of the temporary pond, above the site and approximately 200m beyond the perimeter of the site

5. Results

Sunset Observations:

Observations prior to and after sunset on 28 November 2017 resulted in no observations of microbats or flying-foxes using the temporary sedimentation pond. Also no flying-foxes or microbats were observed flying over the site or in proximity to the site.

Lighting on the site during this period was minimal, but some insect activity (including Christmas beetles) was observed in proximity to these lights, providing a ready source of food for microbats. Despite this, no microbat activity was observed.

Spotlighting:

Spotlighting was undertaken by walking the perimeter of the bushland remnant of the site at approximately 8:45pm for a 15 minute period. The remnant is currently only 1,200m², so this provided ample opportunity to observe activity within this small remnant.

During this period the only fauna observed on the site were 4 feral cats.

Observations in adjacent suburbs

Following the cessation of monitoring on the site, a number of other sites in the general locality (Sutherland and Jannali) were checked for bat activity. Within a 10 minute period approximately 100 flying-fox were observed (both seen and heard) feeding in various trees throughout these areas. This indicates that the conditions were suitable for movement and feeding of Grey-headed Flying Fox during the observation period.

6. Conclusion

Site monitoring in June 2017 concluded, no microbats or flying-foxes were observed using the current temporary water body during the 14 - 22 June 2017 monitoring period. However recordings of echolocation calls do indicate there is microbat activity at the site with no species definitively identified due to the poor quality calls, possibly due to the season and microbats moving in and out of torpor and therefore not exhibiting normal behaviour patterns. Although no activity was observed either visually or using the cameras the conditions were not ideal to definitively prove that the pond is not relied upon as part of local microbat or flying-fox life cycles.

This round of monitoring also confirms the lack of usage of the site by both flying-fox and microbats. The current height of buildings surrounding the temporary water body severely impact on the ability of flying fox to access this resource. These buildings are approved for even greater heights than currently exist on site, and this is expected to further restrict access.

Despite the availability of insect food on site, attracted to site lighting, no microbats were observed either using the pond as a water source or feeding on available insects. While the song meter was not employed during this round of monitoring, due to the ease of visibility of the site and active spotlight searches not detecting any individuals, it is not considered that further deployment of this equipment is warranted.

Observations of adjoining areas indicated high levels of flying fox activity on the night. The fact that none were observed either in, above or around the site indicates that the resources of the site are not critical for this species.

Significant areas of microbat habitat have been removed for road widening works, including hollow bearing trees. It is considered that the site does not contain significant habitat resources for these bats at present.

7. Recommendations

It is considered that the monitoring and reporting undertaken over two periods is sufficient to determine both use of the temporary water body and wider site resources by both flying fox and microbats and no further monitoring is required.