



Application for a

# Section 91 Licence

under the *Threatened Species Conservation Act 1995* to harm or pick a threatened species, population or ecological community\* or damage habitat.

1. Applicant's Name ^: (if additional persons require authorisation by this licence, please attach details of names and addresses)	Ian Drinnan (Manager/Principal Environmental Scientist), and Beth Noel (Environmental Scientist)	
2. Australian Business Number (ABN):	52 018 204 808	
3. Organisation name and position of applicant ^: (if applicable)	..... Sutherland Shire Council	
4. Postal address ^:	Locked Bag 17 Sutherland NSW 1499	Telephone ^:  B.H. 97100333 A.H.
5. Location of the action (including grid reference and local government area and delineated on a map).	<p>The action will take place at the Kareela flying-fox camp, a 1.4 ha remnant of vegetation located west of the Princes Highway at Bates Drive, Kareela in the Sutherland Shire Local Government Area (Figure 1). Map grid reference 56 323196E 6233606N (GDA 1994). Grey-headed flying foxes occupy trees in a shallow gully containing a minor creek line.</p> <p>The flying-fox camp is located within Lot 7013 DP1059414. The land is owned by the NSW State Government under the care and control of Sutherland Shire Council. The bushland is zoned on the Sutherland Shire Local Environment Plan 2006 as Zone 14 Public Open Space (Bushland).</p>	

\* A threatened species, population or ecological community means a species, population or ecological community identified in Schedule 1, 1A or Schedule 2 of the *Threatened Species Conservation Act 1995*.

^The personal details of all Section 91 licences will be displayed in the register of Section 91 licences required under Section 104 of the *Threatened Species Conservation Act 1995*. See notes.

6. Full description of the action and its purpose (e.g. environmental assessment, development, etc.)	<p>The purpose of the action is to disperse the Kareela Flying-fox camp from its current location to habitat that is deemed more appropriate for a flying-fox camp. <b>Accompanying this application is the Kareela Flying-fox Dispersal Plan that provides details of how dispersal at the camp is proposed to be managed.</b></p> <p>Dispersal of the Kareela camp will eliminate the risks the special needs children are experiencing adjacent the camp and remove the significant conflict between Council, residential properties, schools and the general community.</p> <p>The community have been plagued by impacts such as:</p> <ul style="list-style-type: none"> <li>• Risks to human health, particularly vulnerable children with physical and intellectual disabilities, from the presence of flying-foxes which can carry Lyssavirus. Disabled children at the schools commonly put objects in their mouth and parts of dead flying-foxes have been found in play yards;</li> <li>• Noise from 4am lasting the entire day until sunset, disrupting learning within these schools;</li> <li>• Odour especially following rain or high levels of dew;</li> <li>• Faecal drop in pools, on children's play equipment within the special schools, buildings, cars, paths, pergolas and outdoor areas;</li> <li>• Invasion of noxious and environmental weeds in a reserve that was once native bushland;</li> <li>• Loss of native tree canopy as weeds have invaded and trees have been destroyed by flying-fox activity;</li> <li>• Increasing flying-fox numbers at Kareela have pushed the animals closer to schools and residential properties so that insufficient distance between animals and people exist.</li> <li>• Day time activity of the flying-foxes if when numbers are elevated and disturbance occurs</li> </ul>
7. Details of the area to be affected by the action (in hectares).	<p>The trial dispersal action will take place at the Kareela flying-fox camp, a 1.4 ha remnant of vegetation located west of the Princes Highway at Bates Drive, Kareela in the Sutherland Shire Local Government Area. Disturbance activities will be carried out around and within the existing 1.4 ha of vegetation occupied by Grey-headed Flying-foxes.</p>
8. Duration and timing of the action (including staging, if any).	<p>The action will take place during winter, after the population at the camp reaches minimum annual levels. The precise timing of the action will be determined by the timing of the autumn migration, but it will commence as soon after that migration as practical in May to June.</p>
9. Is the action to occur on land declared as critical habitat? (tick appropriate box)	<p>Yes    <input checked="" type="checkbox"/> No</p>
<p>* Critical habitat means habitat declared as critical habitat under Part 3 of the <i>Threatened Species Conservation Act 1995</i>.</p>	

10. Threatened species, populations or ecological communities to be harmed or picked.	<u>Scientific name</u>  <i>Pteropus poliocephalus</i>	<u>Common name</u> <i>(if known)</i>  Grey-headed flying fox	<u>Conservation status</u> <i>(i.e. critically endangered, endangered or vulnerable)</i>  Vulnerable	<u>Details of no. of individual animals, or proportion and type of plant material</u> <i>(e.g. fertile branchlets for herbarium specimens or whole plants or plant parts)</i>  The action will take place when the camp population reaches its annual winter low. It is expected that up to 7,000 will be present, on the basis of population estimates during previous winters.
11. Species impact: <i>(please tick appropriate box)</i> a) For action proposed on land declared as critical habtat; or b) For action proposed on land <u>not</u> declared as critical habitat.	an SIS is attached <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  Items 12 to 25 have been addressed <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<p><i>N.B: Provision of a species impact statement is a statutory requirement of a licence application if the action is proposed on critical habitat.</i></p> <p><i>The provision of information addressing items 12 to 17 is a statutory requirement of a licence application if the action proposed is <u>not</u> on land that is critical habitat. Information addressing any of the questions below must be attached to the application.</i></p>				
12. Describe the type and condition of habitats in and adjacent to the land to be affected by the action.	The vegetation in the north east part of the site is classified as Sydney Coastal Dry Sclerophyll Forests (SMCMA mapping V2 2013), this is the area surrounding Council's depot on Bates Drive, Eucalyptus pilularis and Melaleuca quinquenervia are the majority of canopy species present in this location. The south west part of the site is classified as >90% exotic species (SMCMA mapping V2 2013).			

	<p>Native species in the canopy include <i>Eucalyptus capitellata</i>, <i>Allocasuarina littoralis</i>, <i>Eucalyptus pilularis</i>, <i>Glochidion ferdinandi</i>, and <i>Melaleuca quinquenervia</i>. There is a significant presence of exotic plants especially in the south west part of the reserve. Canopy species Small-leaved Privet (<i>Ligustrum sinense</i>), Large-leaved Privet (<i>Ligustrum lucidum</i>), Coral Tree (<i>Erythrina</i>) and Camphor Laurel (<i>Cinnamomum camphora</i>).</p> <p>The habitat is heavily used by 5,000 to 15,000 Grey-headed Flying Foxes, with temporary peaks of up to ~20,000 Grey-headed Flying-foxes with the majority of vegetation occupied during these temporary peak periods. Figure 2 shows the core habitat occupied for the majority of the peak summer/autumn period. Dead, dying and living trees, native and exotic species are all used as habitat for roosting within the boundary of the reserve.</p> <p>The remnant bushland is surrounded by a mixture of residential, educational and recreational land (Figure 1). The grounds of the Bates Drive Public School, Sylvanvale including Mikarie Child Care Centre and ASPECT Autism join the camp to the north. These facilities cater for children and young adults with physical and intellectual disabilities. Residential houses join the remnant to the west, with a buffer of 20m between residential properties and the camp. This area consists of cleared, mulched land separating the camp vegetation from the residential boundaries. Training and playing fields of the Sutherland Shire Soccer Football Club and the Harrie Denning Soccer Centre bound the camp to the south, the Kareela Golf Course is located across Bates Dr to the north and north east.</p>												
13. Provide details of any known records of a threatened species in the same or similar known habitats in the locality (include reference sources).	<p><u>Data source:</u> Threatened species database maintained by Sutherland Shire Council. The database incorporates records from the DECCW Wildlife Atlas (dated Oct 2011).</p> <p>An area of 2 km radius around the Kareela camp was searched. Northern parts of Royal National Park and significant bushland in the Woronora Valley occur at greater distances from the site. The search was limited to a 2 km radius in order to promote records from urban bushland habitats similar to the Kareela remnant.</p> <p>The following threatened species have been recorded in this area: Superb Fruit-Dove, Major Mitchell's Cockatoo, Gang-gang Cockatoo, Purple-crowned Lorikeet, Eastern Bentwing-bat, Powerful Owl and Grey-headed Flying-fox.</p>												
14. Provide details of any known or potential habitat for a threatened species on the land to be affected by the action (include reference sources).	<table><tr><th>Species</th><th>status</th><th>Habitat</th></tr><tr><td>Superb Fruit-Dove</td><td>V</td><td>requires rainforest or similar closed forest; none affected by the action <a href="http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10709">http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10709</a></td></tr><tr><td>Major Mitchell's Cockatoo</td><td>V</td><td>sighting significantly outside range; considered an aviary escape</td></tr><tr><td>Gang-gang Cockatoo</td><td>V</td><td>requires large tree hollows for nesting &amp; breeding; none affected by the action <a href="http://www.environment.nsw.gov.au/determinations/GanggangCockatooVulSpListing">http://www.environment.nsw.gov.au/determinations/GanggangCockatooVulSpListing</a></td></tr></table>	Species	status	Habitat	Superb Fruit-Dove	V	requires rainforest or similar closed forest; none affected by the action <a href="http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10709">http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10709</a>	Major Mitchell's Cockatoo	V	sighting significantly outside range; considered an aviary escape	Gang-gang Cockatoo	V	requires large tree hollows for nesting & breeding; none affected by the action <a href="http://www.environment.nsw.gov.au/determinations/GanggangCockatooVulSpListing">http://www.environment.nsw.gov.au/determinations/GanggangCockatooVulSpListing</a>
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15. Provide details of the amount of such habitat to be affected by the action proposed in relation to the known distribution of the species and its habitat in the locality .	<p>The Grey-headed flying fox has an extensive range which includes coastal lowlands, coastal ranges and the coastal fall of the escarpment from Mackay, Qld to Geelong, Vic; and tablelands and western slopes in SEQ and northern NSW. Over 270 camps have been identified in the range (Eby 2007 and unpublished data). Three camps, Kareela, Kurnell (previously occupied but not currently) and Menai (temporary) are found in the Sutherland Shire. The Kurnell and Menai camps remain in good condition and would provide suitable alternative habitat for any displaced Kareela Grey-headed Flying Foxes. Other suitable habitat for the Grey-headed flying fox exists in urban gullies and gullies in adjacent reserves (including the Royal and Georges River National Parks) throughout the Sutherland Shire. Other appropriate alternative habitat is identified within the Kareela Flying-fox Dispersal Plan.</p> <p>Habitat will only be selectively removed following a successful dispersal as declared by following Council's Kareela Flying-fox Dispersal Plan.</p>												
16. Provide an assessment of the likely nature and intensity of the effect of the action on the lifecycle and habitat of the species.	<p>The affect on the GHFF would be to initially disturb them for a maximum of 30 days over winter in an attempt to get them to disperse to more appropriate habitat away from residents, schools and other sensitive receptors. Ongoing disturbance would be conducted following a review of the success of the dispersal process as per the <b>Kareela Flying-fox Camp Dispersal Plan (please refer to this document for more details on the staging of dispersal)</b>. This will be strictly controlled and carried out during winter when peak numbers are reduced and no heavily pregnant females or dependent young are present in the camp.</p>												
17. Provide details of possible measures to avoid or ameliorate the effect of the action.	<p>Measures taken to avoid or ameliorate impact from the action include:</p> <ol style="list-style-type: none"><li>1. scheduled to be undertaken at minimum population size;</li><li>2. scheduled to be undertaken outside critical phases of reproduction;</li><li>3. staged program with trial dispersal itself limited to 30 days to minimise the impacts and determine the likelihood of long term success;</li><li>4. supervised by animal welfare and ecologist professionals</li><li>5. works will cease if the health of the individual flying-foxes or their camp as a whole is observed</li></ol> <p><b>For more details see Council's Kareela Flying-fox Dispersal Plan.</b></p>												

*N.B: The Director-General must determine whether the action proposed is likely to significantly affect threatened species, populations or ecological communities, or their habitats. To enable this assessment the Applicant is required to address items 18 to 24. Any additional information referred to in addressing these items must be attached to the application.*

<p>18. In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.</p>	<p>While the Kareela camp contains reproductive animals, the timing of the action, during winter, is outside critical phases in the annual reproductive cycle of the Grey-headed flying fox. The previous season's young are weaned, mating is complete and the females are in the early stages of pregnancy.</p> <p>The action will take place after the autumn migration has occurred and a minimum population size is reached. Observations in previous winters indicate that up to ~7000 animals will be present in the Kareela camp at this time.</p> <p>Some displacement of flying-foxes will occur and this will be carefully monitored and controlled. Should works impact the health of flying-foxes they will cease with flying-foxes allowed to return to Kareela. As per the Kareela Flying-fox Camp Dispersal Plan Section 3.</p> <p>Other actions undertaken in the Sydney region which have resulted in the dispersal or displacement of Grey-headed flying fox have not resulted in localised extinction (Kurnell, Sydney Royal Botanical Gardens). Displaced individuals have established in new camps (eg. Kareela and Centennial Park) or joined existing camps. Recent studies of dispersals by Roberts &amp; Eby (2013) show that in the majority of instances (16 out of 17 cases) dispersal did not reduce the number of flying foxes in a local area.</p> <p>On this basis it is considered that while the dispersal activities over the 30 days may result in the displacement of individuals from the camp, this will not result in a significant impact on the Grey-headed flying fox population.</p>
<p>19. In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.</p>	<p>n/a</p>
<p>20. In the case of an endangered ecological community or critically endangered ecological community, whether the</p>	<p>n/a</p>

<p>action proposed:</p> <p>(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or</p>	
<p>21. In relation to the habitat of a threatened species, population or ecological community:</p> <p>(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and</p> <p>(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and</p> <p>(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.</p>	<p>(i) Only following a successful dispersal of the Kareela flying-fox camp to more appropriate habitat will selective removal of habitat be undertaken. This will involve the removal of up to 10 main roosting trees. Generally they are dead trees (several coral) or exotic tree species. No native species will be removed unless they are dead. Some minor vegetation will be removed prior to dispersal to enable access to be gained to place noise/light/smoke/ultrasonic disturbance equipment within the camp boundaries, this will mostly involve understory weeds.</p> <p>(ii) No fragmentation of this vegetation will occur. Only select roost trees will be removed that are dead and/or exotic species. Some vegetation removal will be required to enable equipment to be placed within the camp to activate physical disturbance however this is minor and will involve mostly understory weeds.</p> <p>(iii) It is unlikely that the removal of habitat will impact the long-term survival of the species</p> <ol style="list-style-type: none"> <li>1. The Sutherland Shire and Sydney as a whole have many suitable areas that can be used as GHFF habitat.</li> <li>2. Previous dispersals have not resulted in the flying-fox population in Sydney reducing.</li> <li>3. The habitat will still be present should dispersal be deemed unsuccessful so that flying-foxes can be allowed to return if necessary</li> </ol> <p><b>For more details of how dispersal will be administered see Council's Kareela Flying-fox Dispersal Plan.</b></p>
<p>22. Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).</p>	<p>No critical habitat has been declared for GHFF</p>
<p>23. Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.</p>	<p>The action is not consistent with the objectives of the Draft National Recovery Plan for the Grey-headed Flying-fox (DECC NSW 2008). However these dispersal actions have been prepared in a staged process to ensure that objectives are met, GHFF health and welfare is protected and the community's impacts are minimised. If GHFF are camped in appropriate locations away from residents, schools and other sensitive receptors conflict between humans and flying-</p>

	foxes will be reduced.
24. Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.	<p>The action is pertinent to three key threatening processes listed on the TSC Act. Each of them is exposed to incremental as well as broad-scale influences and this action will contribute a minor increase in the impact of the processes as described below.</p> <ol style="list-style-type: none"> <li>1. <u>Loss of hollow-bearing trees</u>: There will be no loss of native hollow bearing trees. Some of the large roosting habitat could have hollows and it is likely these will be lost, however it is unlikely that many of them are occupied due to the presence of GHFF on these roosting trees in large numbers.</li> <li>2. <u>Removal of dead wood and dead trees</u>: there is a significant proportion of dead and dying trees within the camp. The activity of the flying-foxes has resulted in the dead trees being unsuitable as habitat for other native species due to their occupation and their gradual destruction of the dead trees by heavy numbers roosting in them. The dispersal of the camp may result in improved biodiversity outcomes for the Kareela habitat.</li> </ol>

## Important information for the applicant

### Processing times and fees

The *Threatened Species Conservation Act 1995* provides that the Director-General must make a decision on the licence application within 120 days where a species impact statement (SIS) has been received. No timeframes have been set for those applications which do not require a SIS. The Director-General will assess your application as soon as possible. You can assist this process by providing clear and concise information in your application.

Applicants may be charged a processing fee. The Director-General is required to advise prospective applicants of the maximum fee payable before the licence application is lodged. Therefore, prospective applicants should contact the Department of Environment, Climate Change and Water NSW (DECCW) prior to submitting a licence application .

A \$30 licence application fee must accompany a licence application.

### Protected fauna and protected native plants\*

Licensing provisions for protected fauna and protected native plants are contained within the *National Parks and Wildlife Act 1974*. However, a Section 91 Licence may be extended to include protected fauna and protected native plants when these will be affected by the action.

If you are applying for a licence to cover both threatened and protected species please provide the information requested in Item 10 *as well as* a list of protected species and details of the number of individuals animals or proportion and type of plant material which are likely to be harmed or picked.

### Request for additional information

The Director-General may, after receiving the application, request additional information necessary for the determination of the licence application.

\* Protected fauna means fauna of a species not named in Schedule 11 of the *National Parks and Wildlife Act 1974*.

Protected native plant means a native plant of a species named in Schedule 13 of the *National Parks and Wildlife Service 1974*.



## Species impact statement

Where the application is not accompanied by a SIS, the Director-General may decide, following an initial assessment of your application, that the action proposed is likely to have a significant effect on threatened species, populations or ecological communities, or their habitats. In such cases, the *Threatened Species Conservation Act 1995* requires that the applicant submit a SIS. Following initial review of the application, the Director-General will advise the applicant of the need to prepare a SIS.

### Director-General's requirements for a SIS

Prior to the preparation of a SIS, a request for Director-General's requirements must be forwarded to the relevant DECCW Office. The SIS must be prepared in accordance with section 109 and 110 of the TSC Act and must comply with any requirements notified by the Director-General of DECCW

### Disclosure of Personal Information in the Public Register of s91 Licences

The Public Register provides a list of licence applications and licences granted. A person about whom personal information is contained in a public register may request that the information is removed or not placed on the register as publicly available.

Copies of all applications and licences issued under section 91 and certificates issued under section 95 of the Act are available on the DECCW website at

[www.environment.nsw.gov.au/threatenedspecies/S91TscaRegisterByDate.htm](http://www.environment.nsw.gov.au/threatenedspecies/S91TscaRegisterByDate.htm)

or in hardcopy form from The Librarian, DECC, 59 Goulburn St, Sydney.

### Certificates

If the Director-General decides, following an assessment of your application, that the proposed action is not likely to significantly affect threatened species, populations or ecological communities, or their habitats, a Section 91 Licence is not required and the Director-General must, as soon as practicable after making the determination, issue the applicant with a certificate to that effect.

*N.B: An action that is not required to be licensed under the Threatened Species Conservation Act 1995, may require licensing under the National Parks and Wildlife Act 1974, if it is likely to affect protected fauna or protected native plants.*

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I confirm that the information contained in this application is correct. I hereby apply for a licence under the provisions of Section 91 of the *Threatened Species Conservation Act 1995*.

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Applicant's name

*(Please print)*

Ian Drinnan

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Applicant's Position &

Organisation *(if relevant)*

*(Please print)*

Manager/Principal

Environmental Scientist

Sutherland Shire

Council

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Applicant's signature



Date

30 April 2015

For more information or to lodge this form, contact the nearest branch of DECCW's Environment Protection and Regulation Group:

Metropolitan Branch  
P: 02 9995 6851  
F: 02 9995 6900  
PO Box 668  
Parramatta  
NSW 2124

Metropolitan Branch  
P: 02 4225 1455  
F: 02 4225 3545  
PO Box 5436  
Wollongong  
NSW 2515

North East Branch  
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F: 02 6642 7743  
PO Box 498  
Grafton  
NSW 2460

North East Branch  
P: 02 4908 6800  
F: 02 4908 6810  
PO Box 488G,  
Newcastle  
NSW 2300

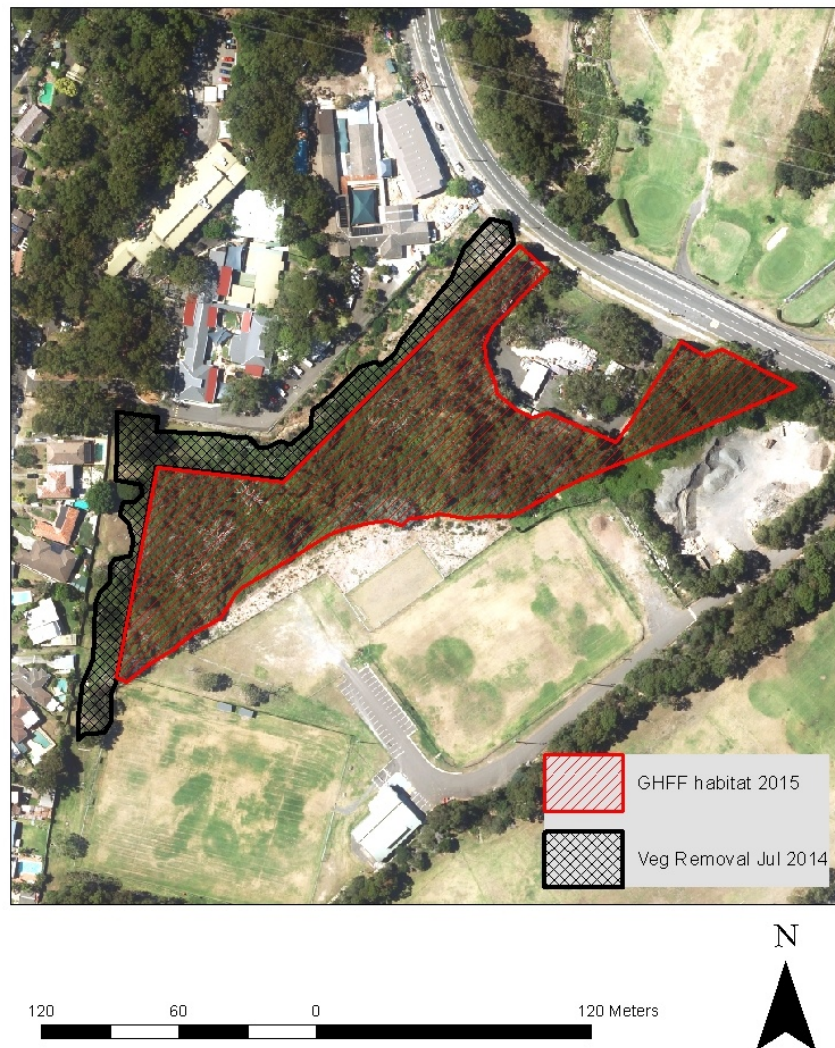
North West Branch  
P: 02 6883 5330  
F: 02 6884 9382  
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South East Region  
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South Branch  
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Department of Environment, Climate Change and Water (NSW)  
PO Box A290, Sydney South NSW 1232  
Phone: 131 555 (Environment Line) Fax: 9995 5999  
Email: [info@environment.nsw.gov.au](mailto:info@environment.nsw.gov.au)

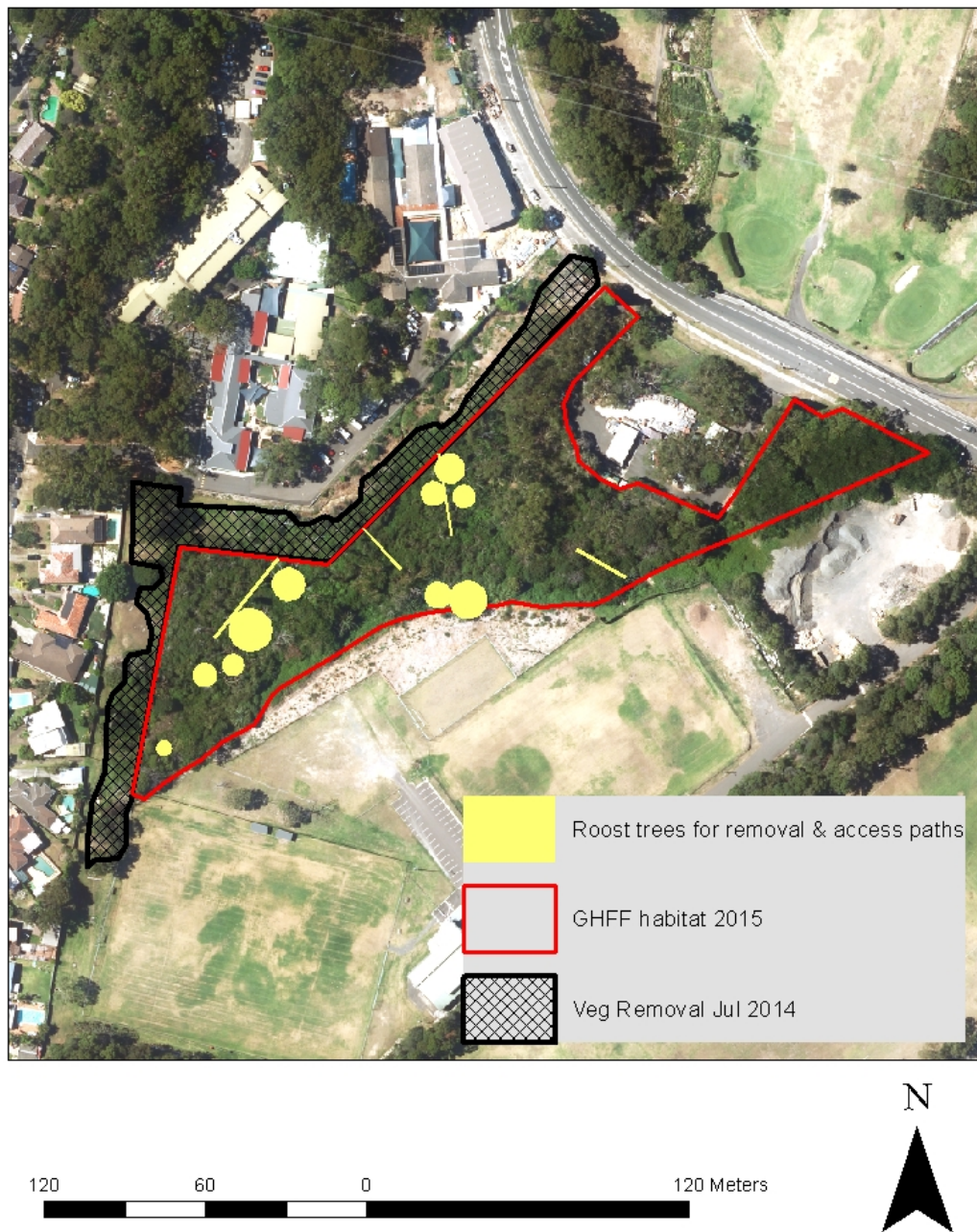
## GHFF Habitat at Kareela April 2015



*Figure 1.* shows an aerial view of the remnant vegetation that contains the Kareela flying fox camp comprising 1.4 ha of vegetation and the immediate surrounds. This map also shows the area of vegetation cleared in Jul-Aug 2014. The figure shows special needs schools to the north, residential properties to the west, playing fields to the south, Golf Course to the north east.



## Access Paths and Selected Roost Tree Removal



*Figure 2.* Shows the selected roost trees for removal as well as the paths to be cleared to establish dispersal disturbance equipment.