LAND MANAGER GUIDELINES FOR POWERFUL OWL CONSERVATION IN URBAN SYDNEY

Habitat Types	
Nesting	Forest containing suitable nest trees in proximity (100 m) to roosting habitat. Nesting trees are typically large live trees (generally >70 cm DBH) with large hollows in the main trunk.
Roosting	Mesic vegetation along ephemeral and perennial drainage lines and gullies where tree species provide a dense canopy (including individual trees) and often a more open sub-canopy. Includes all areas of rainforest and wet sclerophyll forest.
Foraging	Forest, woodland and complex urban vegetation suitable for arboreal prey species. Habitat patches greater than 1 ha where patch is any contiguous area of foraging vegetation separated by gaps less than about 50 m. Includes: all treed vegetation with >10 habitat trees (any hollow size) per hectare or >3 trees over 70 cm DBH per hectare; complex urban vegetation (including planted vegetation) with dense vegetation of mid-storey and/or canopy, including parks and residential backyards suitable for movement of urban adapted arboreal fauna (eg Common Ringtail Possum).
Location and Distribution	
Territory & nest site	Records of owls (roosting or calling), particularly in the early evening or early morning, from March to September in combination with roosting and nesting habitat should be assumed as having a nesting site in the area. Use surveys to confirm. A surrogate territory can be defined as a 2 km radius circle around the nest site, common roost site or records as above.
Local population	A breeding territory and adjacent territories within 5 km, where the core of the territory is defined as the nest site, common roost site or records as above.
Retention of Habitat	
Area of habitat	Nesting and roosting habitat: All habitat is to be retained within a known territory. Foraging habitat: Retain a minimum 450 ha in a maximum of 4 patches within the territory (2 km radius around the nest site, roosting site or records as above).
Buffer zones	100 m around nest sites. 50 m around roost sites.
Prey	Consideration must be given to the viability of prey populations in known Powerful Owl areas, including breeding, foraging and movement of these species.
Connectivity	Corridors are important, particularly riparian corridors and foraging habitat. Maintenance of at least 100 m wide corridors between large remnants and a reduced length where corridors are narrower.

Land Management	
Development	Proposals to remove >1 ha of foraging habitat within 2 km of a nest site (including staged proposals), where the remaining habitat in this area is below the minimum 450 ha vegetation retention threshold, need to be carefully considered and justified with regard to significance assessment (Section 5A, *Environmental Planning and Assessment Act 1979*). Nest boxes and fauna over/underpasses are to be used to mitigate impacts to prey species where clearing is permitted. Nest boxes cannot be used as offsets for the loss of Powerful Owl nesting hollows. Other impacts such as lighting installations should include impact modelling and adhere to the buffer zones described above.
Hazard reduction burning	Rural Fire Service Threatened Species Hazard Reduction List: No burning around known nesting sites at any time. No slashing, trittering or tree removal of or around known nesting sites. Records of owls from March to September in combination with mesic vegetation and adjacent forest should be assumed as a nesting site in the vicinity. Use surveys to confirm OR exclude the area from the burn. Where fire is necessary and a nest site is known or assumed, create an exclusion zone (50 m) around nesting site and the adjacent roosting habitat and burn outside of the breeding season (May to end-September).
Services work	Where there will be minimal impact on vegetation (mowing, track maintenance works etc), avoid loud machinery and equipment or night time lighting during the breeding season (May to end-September) within the buffers outlined above. Where large impacts on vegetation are proposed, refer to Development guidelines above.
Survey	
Effort	Minimum 8 nights survey (with at least 4 consecutive nights and all in suitable conditions)
Technique	Early evening listening surveys in the lead up to and during breeding season (March to end-September) provide the most valuable and accurate information on breeding sites. Playback should not be used in known or suspected breeding sites from May to end-September due to disturbance to breeding. Playback can be used at other times of the year.

Photos Top right: Adult by Kristen Hardy | Top left: Chick in hollow by Jenny Stiles | Bottom: Juveniles by Kristen Hardy

For more information, please contact BirdLife Australia (powerfulowl@birdlife.org.au) or the NSW Office of Environment and Heritage.

These guidelines have been prepared based on work conducted within the Powerful Owl Project, in conjunction with the large forest owl management workshop held by Lake Macquarie City Council in 2014 and the LMCC Draft Interim Large Forest Owl Planning and Management Guidelines 2014 developed as a result.