Bush Stone-curlew Management Plan

Tweed River High School
12-16 Heffron Street, Tweed Heads, NSW 2487

20202432

31 August 2021

KLEINFELDER
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Kleinfelder Project: 20202432

Kleinfelder Document: NCA21R121974 - B

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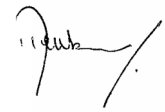
Document Control:

Version	Description	Date
2.0	Final	31 August 2021
1.0	Draft	20 August 2021
Prepared	Reviewed and Endorsed	
		
Kevin Wormington	Dallas Milburn	

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1 INTRODUCTION

1.1 OVERVIEW

Kleinfelder was engaged by New South Wales (NSW) Department of Education to prepare a Bush Stone-curlew (*Burhinus grallarius*) Management Plan for the Tweed River High School. This was due to a request made by the Tweed Shire Council after their review of the Biodiversity Development Assessment Report (BDAR) for the Tweed River High School (TRHS) (Kleinfelder 2021). The Bush Stone-curlew is endangered under the NSW *Biodiversity Conservation Act 2016*.

The fauna field survey for the TRHS BDAR (Sections 4.1.4.1-3) detected the calls of the Bush Stone-curlew outside of the Development Site in the southern section of the Tweed River High School grounds or its surrounds (Section 4.1.6). This was inside of the Study Area of the TRHS BDAR, and the Bush Stone-curlew was tested for significant impacts (Section 5.1.2.2). The test found that the Bush Stone-curlew would not be significantly impacted as there would only be 0.366 ha of marginal habitat disturbed, the distance it was recorded from the construction activities and that it was unlikely to directly or long term impacted. However, a survey on the 7 May 2021 found a pair of Bush Stone-curlews day roosting and feeding at night in the carpark area at the front of the school (Abor Ecological 2021). The survey was in association with the development of D Block which was not a part of the BDAR development area.

The Tweed Shire Council decided that further protection for the Bush Stone-curlew was necessary during the development construction phase of the BDAR development site and the ongoing operational phase of the Tweed River High School, and a species management plan would be required. The NSW Department of Education agreed that as a best practice measure a species management plan would be a valuable tool.

1.2 SITE LOCATION AND LANDSCAPE

Tweed River High School is in the Tweed Shire Local Government Area on Lot 219 DP755440, Lot 1 DP781510, Lot 1 DP517503, Lot 2 DP517503 and Lot 7105 DP803772. The construction associated with the new development will occur in the first two property parcels above, within and adjacent to the footprint of existing buildings, sports facilities, carparks and agricultural areas. The TRHS schoolgrounds are zoned R2 – Low density residential. Full details on the location and proposed development can be obtained from the TRHS BDAR (Sections 1.2 and 1.3).

Tweed River High School is in the Burringbar-Conondale Ranges subregion of the South-eastern Queensland IBRA bioregion. It is situated on alluvial soils and is part of the Tweed River catchment. Full landscape details can be obtained from the TRHS BDAR (Sections 2). The location where the development will occur was determined to be planted vegetation (TRHS BDAR Section 3).

1.3 INFORMATION SOURCES

Information sources for this management plan will include:

- Biodiversity Development Assessment Report for the Tweed River High School (Kleinfelder 2021).
- Threatened Species App (Office of Environment and Heritage NSW 2021a).
- Threatened Species Profile Database (Office of Environment and Heritage NSW 2021b).
- Recovery Plan for the Bush Stone-curlew *Burhinus grallarius* (DEC 2006).
- Birds of Australia Digital Edition (Pizzey and Knight 2014).
- Bush Stone-curlew impact assessment and management plan, K Block Redevelopment, Tweed River High School NSW (Abor Ecological 2021) (Attached).

1.4 ECOLOGY AND THREATS

1.4.1 Description

The Bush Stone-curlew stands about 55-59 cm tall and has a 80-105cm wingspan. It has a grey to light brown back marked with black blotches, and a streaked rump. It has buff and white underparts with dark streaks, and a black band that runs from near its eye down its neck. This species has large, bright yellow eyes and a hunch-shouldered stance on long spindly legs. When disturbed it lies flat on the ground, with its head and neck outstretched. Its call is a loud eerie wailing "wee-loo", mostly heard at night.

1.4.2 Habitat Preferences and Diet

The Bush Stone-curlew has a wide range of habitat including open woodlands, sand plains with spinifex and mallee, coastal scrub, mangrove fringes and golf courses. It would have access to a few of these habitat types in and around the Tweed River High School. It prefers a grassy groundlayer with fallen timber where it forages for, and feed on insects and small vertebrates, such as frogs, lizards, snakes and mice. It is largely nocturnal, being especially active on moonlit nights. Bush Stone-curlews have also been known to use gardens that have litter and sticks for foraging.

Bush Stone-curlews are a mobile species and have a home range of 26-64 ha for resident breeding pairs. At Tweed River High School, they would potentially use the school's grounds and surrounding vegetation.

1.4.3 Breeding Ecology

Bush Stone-curlews can live for thirty years and may have long term pair bonding and generally start breeding at 2-3 years old.

Bush stone-curlews breed throughout spring and summer and usually lay two eggs around August to October. Another two eggs can be laid around November to January. The nest is on the ground in a scrape or small bare patch.

The eggs are incubated for 30 days by both parents. After hatching, chicks are immediately moved away from the nest and taught how to feed. Chicks cannot fly until they are around nine weeks old, so they rely heavily on camouflage to protect them from predators during this time.

1.4.4 Threats

Threats to the Bush Stone-curlew at Tweed River High School during the proposed development construction phase could include:

1. Nest destruction and trampling of eggs by people or machinery.
2. Removal of gardens during the development.
3. Modification and destruction of ground habitat through removal of forest litter and fallen timber.
4. Increased predation opportunities by dogs, foxes and cats.

1.5 MANAGEMENT FOR BUSH STONE-CURLEWS

To manage the Bush Stone-curlews during the construction phase of the new development the following measures are recommended.

- Prior to the commencement of earthworks, the site should be inspected by an ecologist to ensure Bush Stone-curlews are not nesting on the site. As part of the inspection, the ecologist should seek advice from the school groundsmen who may know where the birds are roosting or nesting, or where they have in the past.
- If nesting is observed, an exclusion zone of at least 30 m is to be established around the nest site using an exclusion fence. The exclusion fence should allow for the non-flying chicks to move out of the nest area.
- All works are to cease in the exclusion zone until chicks have hatched and moved from the nest site by the adults, which occurs soon after hatching.
- Works elsewhere on the site are to be conducted under the recommendations of an ecologist, so the behaviour of the nesting birds can be monitored.

- Where birds are observed roosting on the site, no construction work is to take place within 20 m and an unfenced exclusion zone is to be established marked with flagging tape while the roost is in use. This is especially important if there are young birds in evidence.
- All employees, contractors and sub-contractors working on the site will undergo site induction training and should be made aware of all matters regarding fauna management, particularly in relation to Bush Stone-curlew. All site personnel are to be made aware of the location of the nest or roosting areas (if present), the extent of the exclusion zones and when the exclusion zones are in force.
- Posters with photographs and information of the Bush Stone-curlew should be placed on the exclusion fencing. The students should also be made aware of the Bush Stone-curlews and their management.
- Maintain no or low artificial lighting in the construction area overnight if night work is not a part of the project. This is to prevent the birds being attracted to the area by insects around the lights.
- The construction site should be inspected by a member the contract team the start of each workday to ensure no Bush Stone-curlews have entered the sites. This includes under demountable buildings and storage areas from August onwards when nesting may commence.
- If a Bush Stone Curlew is found in the construction area, a qualified person (wildlife carer or ecologist) should be contacted to move the bird away from the construction area. Contacts for the qualified person should be established prior to construction commencing.
- Review chemical use and storage, especially insecticides, to minimise possible effects on the Bush Stone-curlews and other wildlife.
- Review construction site controls such as access and vehicle speed limits if Bush Stone-curlews are identified within 100 m of the construction area.
- Actions 3.5 and 3.7 of the Bush Stone-curlew Recovery Plan focus on management of habitat for this species. The provision of mulched garden beds around trees and allowing fallen branches or logs to remain can enhance roosting and nesting habitat. Local native species should predominantly be used as part of any landscaping.
- To prevent an increase in predator activities in the school, general hygiene around the construction site should be maintained so that food scraps are not left on the ground or in places that could attract high predator use. Appropriate bins should be placed in easy to access locations, especially those for food scraps.
- The entrance gate to the school and any gates that may be put in place for the construction should be closed at night. There is a fence around the school grounds that should be suitable for restricting dog access.
- No animals should be brought into the school grounds by the construction crew.

In addition, during the ongoing operational phase of the TRHS these measures should be taken:

- Keep the school community informed of the potential presence of bush stone curlew particularly during breeding season to avoid harm. Agreed community lines and notifications protocols should be formalised between the stakeholders.
- Contact Tweed Valley Wildlife Carers Inc. (TVWC) should an injured or trapped Bush Stone-curlew be detected on school grounds.
- Maintain no / low artificial light levels at night.
- Source and install bush stone-curlew awareness signs around the fencing of the school grounds (if required) or on Council-managed land.

2 REFERENCES

Abor Ecological (2021) *Bush Stone-curlew impact assessment and management plan, K Block Redevelopment, Tweed River High School NSW*. Abor Ecological, Alstonville, NSW.

DEC (2006) *Recovery Plan for the Bush Stone-curlew* Burhinus grallarius. Department of Environment and Conservation (NSW).

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Pizzey G. & Knight F. (2014) *Birds of Australia Digital Edition*. 8th edn. Gibbon Multimedia (Aus) Pty Ltd, Craigieburn, Australia.