



Fiona Stanley Hospital

Your Ref: EPBC Ref2008/3970
Our Ref: APtdEPBC0508
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Dr Andrew Weavers
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Dear Dr Weavers

**FIONA STANLEY HOSPITAL PROJECT (EPBC REF: 2008/3970) –
PROVISION OF ADDITIONAL INFORMATION**

The following information has been prepared to clarify and further describe project design and proposed management and in response to questions raised by the Commonwealth Department of Environment, Water, Heritage and Arts (DEWHA) during a teleconference with the Fiona Stanley Hospital (FSH) Project site creation team on Friday, 11 April 2008.

Memorandum of Understanding (MOU) for Environmental Initiatives

The Department of Health (DoH), the Department of Housing and Works (DHW) and the Department of Environment and Conservation (DEC) have entered into this Memorandum of Understanding (MOU) in order to implement the environmental management and conservation initiatives associated with the development of the FSH. An unsigned draft of this MOU was included in the original referral documentation.

This MOU has since been executed. Refer to Attachment 1 for a copy of this document.

The relevant personnel at DEC to discuss the MOU are Gordon Wyre, Director Native Conservation Division, Peter Sharp, Director – Parks and Visitor Services Division and Tracy Shea, A/Assistant Director – Parks and Visitor Services Division. Other DEC personnel of project relevance are Dr Ken Atkins, Manager of Species and Communities Branch, who undertook a peer review of the additional documentation relating to the Grand Spider Orchid; Dr Peter Mawson, who has developed the scope for the Carnaby's

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Black Cockatoo Research Program; and Brendan Dooley, Regional Parks Unit Manager, with whom we are liaising with in regard to the rehabilitation of habitat in the Beeliar Regional Park. The above officers can be contacted at DEC on 08 9334 0333.

Location of FSH Project Area Compared to Other Areas of Vegetation Suitable for Carnaby's Cockatoo Foraging

An aerial photo of the southern central metropolitan area has been produced showing areas of remnant woodland in reserves, open space, and government land that are likely to be food sources for the Carnaby's Black Cockatoo (refer to Attachment 2). These areas have been identified through a desktop review based on the presence of upland vegetation dominated by Banksia and/or Marri (typically with Jarrah) trees, such as that found in the FSH Project Area.

The marked up aerial photo indicates the distance between remnant areas of vegetation and the position of the FSH Project Area compared to these areas. The locations of the major tertiary hospitals in this region are also shown.

Acquisition of Carnaby's Black Cockatoo Habitat in Wheatbelt for Conservation

As part of proposed off-site mitigation strategy described in the referral documentation for the FSH Project, and as agreed in the interagency MOU (see Attachment 1, Clause 7.5), the Project is providing funds to the DEC to acquire a parcel of land in the Wheatbelt region, which is of high habitat value to Carnaby's Black Cockatoo. The site selection criteria for the parcel of land is that it includes either or both foraging and breeding habitat for Carnaby's Black Cockatoo, is in private ownership, and is potentially subject to threatening processes (eg through rural use or development).

A parcel of land in Clackline, 80km north-west of Perth has been identified with the assistance of the DEC Nature Conservation Division. The remnant bushland is 45ha in size and is immediately adjacent to and bordered on three sides by the Clackline Nature Reserve. The parcel of land is high in the landscape and rises to a plateau feature, and is incised with a number of deep drainage gullies.

DEC has advised that together with the adjoining reserve, this parcel of land represents a significant refuge for wildlife within the district. It contains large old trees (Wandoo and Powderbark Wandoo) which provide a range of nesting hollows for native fauna. This area is a known habitat of Carnaby's Black Cockatoos and they often feed in a grove of pines which grow to the immediate east of the parcel of land being purchased.

The vegetation is in excellent condition and is representative of Wandoo/Powderbark Woodland. The parcel of land is dominated by



Eucalyptus wandoo, *Eucalyptus accedens*, *Eucalyptus marginata* and *Corymbia calophylla*. Stands of *Banksia grandis* and *Allocasuarina fraseriana* are also present. The location of the vegetation type is significant as it is located within a transition zone from the Darling Range community to the Wheatbelt vegetation type. Refer to Attachment 3 for photos of the parcel of land in Clackline.

According to DEC, the property is zoned appropriately for rural residential subdivision. This has the potential to threaten the existing values to Carnaby's Black Cockatoo through clearing for roads and house blocks and resultant increased activity in the area.

On behalf of the Project, DEC has recently reached agreement with the owner to purchase this parcel of land and have signed a formal offer and acceptance. Ministerial approval for the purchase was given earlier in this week. A subdivision application will be lodged with the Western Australian Planning Commission (WAPC) in the near future and, once WAPC approval is given, the area will be surveyed, then excised from the property and transferred to the State of Western Australia. At this time, the parcel of land will be incorporated into the adjoining Clackline Nature Reserve. This process is likely to take approximately six months.

Staged Clearing

The Project's objective is to manage the development such that the Project Area retains (albeit decreased) function as a Carnaby's Black Cockatoo foraging area. Site clearing will be undertaken in stages with each stage cleared only immediately before it must be developed for key buildings, facilities, or plant. The original referral documentation showed three stages but this has since been revised. The revised staging plan now consists of five stages (refer to Attachment 4). This reflects the scheduled development of the Project Area.

Landscaping at FSH

As described in the original referral documentation and given the concern regarding the cumulative impact of clearing of non-breeding habitat on the Swan Coastal Plain, and with the aim of maintaining the value of the Project Area environs as a 'stepping stone' for the Carnaby's Black Cockatoo, the on-site management strategy is based on a combination of retention of three hectares of remnant vegetation and the re-establishment of flora species that are suitable as a Carnaby's Black Cockatoo food source within hospital precinct's landscaping and rehabilitation areas.

The proposed rehabilitation includes a Water Corporation sewer easement to the immediate north of the FSH, between the existing St John of God Hospital and the wetland referred to as Quenda Swamp (refer to Attachment 5). This area will be treated by the removal of weeds, followed by spreading of topsoil



over the sewer easement stripped from the Project Area and top-up broadcast seeding, using seed collected in the summer of 2007-08 from the Project Area. A Plan of Works for this rehabilitation project is currently being prepared, in cooperation with the City of Melville who has management over the Quenda Swamp and sewer easement.

In regards to on-site landscaping, it is proposed that the detailed FSHHP Landscaping Plan will be submitted to DEWHA for review as a condition of EPBC approval. This plan would be based on the strategy described hereafter.

The landscaping strategy generally consists of three tiers of plant treatment in terms of percentage of natives used based on the function of the area:

- Greenways – there are two greenways; a north-south corridor between the proposed Northern Conservation Area and the East-West Connector Road, and the area around and including the artificial lake north of the proposed Southern Conservation Area. With the exception of some small sections of lawn for passive recreation use, these areas will be entirely planted with native plants with all trees being those that would provide food for Carnaby's Black Cockatoo (eg Marri, Banksias). The greenways will include pockets of densely planted trees and shrubs which aim to link, provide soft interfaces with, and enhance the function of the retained bushland areas.
- Streetscapes – the major roads through the FSH Project Area will be lined with native trees, all suitable for either feeding (eg Banksia, Marri) or nesting purposes (eg Tuarts). No understorey species suitable for Carnaby's Black Cockatoo will be used in streetscapes (eg median strips, verges) as low growing forage plant species should be kept away from roadsides due to the danger of vehicle/bird collision.
- Other areas of open space within the FSH Project Area (including urban plazas, internal gardens, and small areas of roof gardens) – at ground level these areas will consist of a mixture of native and exotic plantings, between hard space and lawn areas. Non-native species will be selected in consideration of their potential suitability as an additional food source for the Carnaby's Black Cockatoo in these areas (eg Macadamia trees). In regards to the small areas of roof gardens, these will mostly be planted with low lying grasses and groundcovers, some of which will be species naturally found within the FSH Project Area. The Project is investigating what shallow rooting native plant species exist that would be suitable for Carnaby's Black Cockatoo, and could grow in roof gardens (eg hybrid, or dwarf Banksias). The Project has investigated the planting of Banksia or Marri trees in these areas, however due to these species having large tap roots this proposal is not being progressed. The detailed Landscaping Plan will provide details on this investigation and the final planting plan.



The Carnaby's Black Cockatoo Management Plan submitted as part of the original referral documentation includes targets for use of native plants, and within that, targets for the use of species that are found on site (refer to Table 1). These targets have been further developed to increase the number of native species that can be used that are not found naturally on site but may provide a suitable food source for the Carnaby's Black Cockatoo, and is consistent with the strategy as described above. The intention of the Project in regard to lawns/turf has also been clarified.

Table 1 Landscaping targets for Carnaby's Black Cockatoo foraging

Area	Original referral target	Revised target
Greenways	Planted with 100 percent native species, with 100 percent of tree species and 70 percent of understorey species being those found in Project Area.	Planted with 100 percent native species, with 100 percent of tree species and 70 percent of understorey species being those found in Project Area or are native species suitable for Carnaby's Black Cockatoo.
Streetscapes	Planted with 100 percent native species, with 70 percent of tree species and 50 percent of understorey species being those found in Project Area.	Planted with 100 percent native species, with 70 percent of tree species being those found in Project Area or are native species suitable for Carnaby's Black Cockatoo.
Other areas of open space within FSH, including urban plazas, internal gardens, and roof gardens	Planted with 70 percent native species, with 60 percent of tree species and 50 percent of understorey species being those found in Project Area	Planted with 70 percent native species, with 60 percent of tree species and 50 percent of understorey species being those found in Project Area or are native species suitable for Carnaby's Black Cockatoo. Non-natives species will be selected in consideration of potential suitability for additional food source in these areas (e.g. Macadamia trees).

Refer to Attachment 6 for an indicative sample planting guide for the landscaping categories above.

Appropriateness of Location of Proposed Conservation Areas

DEWHA raised concern that the areas proposed for conservation are not representative of the best type and condition of Carnaby's Black Cockatoo foraging habitat on site. The proposed Northern and Southern Conservation Areas were originally delineated on the basis of condition and representation of the key vegetation types on site as well as requirements for appropriate



space and position for the core Hospital building. The Conservation Areas have been extensively reviewed several times including in light of Matters of NES being raised and in consideration of the Carnaby's Black Cockatoo requirements, which are primarily on the basis of abundance of forage plants that are suitable for Carnaby's Black Cockatoo. It was found that the conservation areas selected were equivalent to, and in the case of the Northern Conservation Area, better than, all other areas of foraging habitat in the undisturbed state on site.

The proposed Northern and Southern Conservation Areas support Marri and Banksia woodland; both high value foraging habitat for the Carnaby's Black Cockatoo, and were classified by GHD (2005) as in excellent and very good condition respectively as per the Keighery condition rating scale (refer to Attachment 7).

The *Melaleuca preissiana/Banksia littoralis* dampland contains impressive tall stands of these trees however was not selected because it contains a much higher number of weeds in its understorey and the Melaleucas are not known high value feed for the Carnaby's Black Cockatoos. Although the dampland will be cleared, the Project is committed to planting seedlings of *Melaleuca preissiana* and *Banksia littoralis* in a recreated dampland area as part of the enhancement of the artificial lake to the north of the Southern Bushland Area, which is to be used as both a key landscape feature and a stormwater detention basin.

Since the original referral documentation was submitted, the proposed Southern Conservation Area has been changed in shape and has also been relocated eastwards on plans for the FSH. This has been done to exclude a Dieback infected area determined in the Site Dieback Survey conducted in late January 2008. The relocation has also involved the rationalisation of the proposed road network, which followed extensive re-examination of internal transport, safety and access needs. The size of the Southern Conservation Area remains unchanged and the type, form and condition of retained vegetation is the same as previously stated.

The condition of the proposed Southern Conservation Area was raised by DEWHA as compared to areas of similar vegetation further to the east, which may be perceived to be in better condition. This may be related to observations of the vegetation to the south of the artificial lake, on the northern slope of the dune swale, recently experiencing drought stress. This has resulted in the deaths of a number of mature banksias over this area. All remaining banksias present are surviving well and should recover with the latest good rains and decrease in groundwater abstraction¹. There is also evidence of germination of young banksias. The understorey is diverse and lacks weed encroachment. Strategen undertook a repeat of the condition

¹ Challenger TAFE currently draws water from the underlying groundwater for irrigation (the artificial lake is a storage basin), and its current bores, which are immediately adjacent to the proposed Southern Bushland Area, will be moved to the south side of the campus.



rating over this area on 2 May 2008, which confirmed the previously assigned "very good to excellent" category (as per the Keighery condition scale) from the GHD (2005) vegetation condition mapping (refer to Attachment 7).

The vegetation east of the proposed Southern Conservation Area is mostly on the southern facing side of the dune swale. This means that the vegetation is subject to less annual sunlight and retains slightly more moisture in the soil profile. As a result there are proportionally less drought deaths in this area and the understorey is more lush. There are also more tall *Allocasuarina fraseriana* trees in this area, which provide more shade. These trees have less forage value for the Carnaby's Black Cockatoos than the Banksia and Marri trees. In regards to condition, a reinspection on 2 May 2008, found the vegetation condition in this area to be the same category of "very good to excellent" as the proposed Southern Conservation Area, also consistent with the GHD (2005) mapping. Refer to Attachment 7 which includes photos showing a comparison between the two areas.

Research Program for Carnaby's Black Cockatoo

As detailed in the original referral documentation and the MOU, the FSHP is providing \$275,000 in funding for a research program, aimed at increasing the knowledge and assisting in the recovery of the Carnaby's Black Cockatoo species. The DoH funding amounts to half of the total budget requirements for this program, with the remainder provided by other sources through DEC. Refer to Attachment 8 for the draft scope of the research program developed by Dr Peter Mawson of DEC.

Request to Proceed with Assessment Report

On behalf of the Project, with the submission of this letter and the Response to Submissions Document, I would like to request DEWHA consider the complete package of referral and assessment documentation provided and proceed with the assessment under the EPBC Act.

Yours sincerely

Alan Piper
EXECUTIVE DIRECTOR PROCUREMENT

8 May 2008