

23rd May 2018

Attn: Alan Bawden
NSW Rural Fire Service
Customer Service Centre
Coffs Harbour NSW 2450

Dear Alan,

**RE. Proposed North Byron Parklands Conference Centre and Cabins
Lot 402 and 403 DP 755687, Tweed Valley Way and Jones Road, Yelgun**

Reference is made to Item No. 3 of the NSW RFS correspondence (see *attached*) dated 6th March 2018, requesting further information in relation to the proposed conference centre and associated cabins and structures which forms part of the State Significant Development (SSD) proposed in accordance with the 'Environmental Planning and Assessment Act 1979'.

Item 3 of the aforementioned correspondence states –

"The inclusion of the proposed conference centre and cabins does not adequately address the requirements of Planning for Bush Fire Protection 2006. The proposed accommodation cabins are classified as Special Fire Protection Purpose development under S100B of the Rural Fires Act 1997. The accompanying bush fire report does not adequately justify why the proposed cabins cannot achieve a maximum 10kW radiant heat exposure. The report does not provide adequate justification that the identified bush fire hazard cannot be managed or the cabins can be relocated further away from the identified bush fire hazard."

This response is provided in two parts and is summarised as follows –

1. Further information provided as requested and the original bushfire engineering brief relating to the ecological restrictions in removing the hazard, in turn permitting compliance with the NSW RFS Fast Fact for Ecotourism No. 1/14 dated October 2014.
2. Notwithstanding Item 1, the initial report provided a specific section demonstrating compliance with the performance criteria of s4.2.7 Planning for Bushfire Protection 2006 in relation to asset protection zones.

Item 1 - Additional information is provided, consistent with the meetings undertaken with the NSW RFS both on-site and at the Coffs Harbour Service Centre prior to the submission of the development application. The primary outcome of the meetings was the requirement to demonstrate some ecological value and reasoning why the asset protection zones could not be provided by removing part of the hazard and details of water supply. This is documented in the current bushfire threat assessment report and it is understood triggers the NSW RFS Fast Sheet 1/14 which the report establishes compliance.

The applicant, as a response to the NSW RFS request for further information, has sought a more detailed assessment from the consultant ecologist Mark Fitzgerald which is *attached* for consideration. The applicant has also provided further information which identifies the subject area as being part of the approved concept approval for the conference centre. The concept plan received Ministerial approval in 2012 over the subject site. This information is also provided (see Planners North document *attached*) to address the NSW RFS query in relation to the location of the proposed conference centre and associated structures.

Item 2 – The original bushfire report also provided a specific performance solution to address the performance criteria of s4.2.7 Planning for Bushfire Protection 2006, in addition to the primary compliance information outlined in Item No. 1.

The performance solution establishes with evacuation planning, the performance criteria will be achieved to allow occupants and emergency services to not experience greater than 10kW/m² when exiting or entering a building.

This concept is not dissimilar to evacuation planning undertaken in a single building through a designated exit or horizontal exits in the case of aged care and hospital where the exit will not receive greater than 10kW/m². The methodology is also consistent with the NSW RFS Fast Fact 1/14 which considers this approach as satisfying occupant and emergency service safety during a bushfire event irrespective of the business model for the development (ecotourism).

It is requested that a review of the original bushfire report be undertaken in relation to the performance solution section of the report and also the additional information attached in relation to the eco-tourism Fact Sheet 1/14.

Given the significance of this development in relation to the overall approved concept of the site, I will be available to attend a meeting to provide further discussion, clarification or additional information if required.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Peter Thornton'.

Peter Thornton

BPAD-L3 Accredited Practitioner No. 14867

ATTACHMENTS

- **NSW Rural Fire Service correspondence – Agency Comment: State Significant Development North Byron Parklands Cultural Events Site; Tweed Valley Way and Jones Road, Yelgun, dated 06.03.2018**
- **Planners North correspondence – Concept plan approval for North Byron Parklands, dated 23.05.2018**
- **Mark Fitzgerald, Ecological Consultant – RFS Fuel Reduction Requirement North Byron Parklands, dated 04/2018**



NSW RURAL FIRE SERVICE



The Secretary
NSW Planning & Environment
GPO Box 39
Sydney NSW 2001

Your Ref: SSD 8169
Our Ref: D17/184
DA17011805713 AB

ATTENTION: Pamela Morales

6 March 2018

Agency Comment: State Significant Development North Byron Parklands Cultural Events Site; Tweed Valley Way and Jones Road, Yelgun

Dear Ms Morales

I refer to your letter dated 15 December 2017 seeking bush fire protection advice from NSW Rural Fire Service (NSW RFS) regarding the above State Significant Development (SSD) proposal in accordance with the 'Environmental Planning and Assessment Act 1979'.

The NSW RFS has reviewed the application including the associated documentation and understands the SSD proposal seeks approval for:

- Continued use and development of the North Byron Parklands cultural events site;
- Proposed Uses Cultural events – including cultural, educational, conference and outdoor events with ancillary accommodation, camping and car parking Outdoor Events Outdoor events comprising:
 - 2 large events per year (ie. Splendour in the Grass and Falls Festival) over a maximum of 5 event days each, catering for up to 35,000 patrons per event day;
 - 3 medium event days per year (for other music concerts or cultural events), catering for up to 25,000 patrons per event day;
 - 5 small community event days, catering for up to 5,000 patrons per event day; and
 - 2 minor community event days, catering for up to 1,500 patrons per event day.

Further, approval is sought for the progressive growth of one of the large events (Splendour in the Grass) to 42,500 patrons and then 50,000 patrons a day, subject to meeting key performance indicators (KPIs).

Postal address

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Street address

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Planning and Environment Services (North)
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- *Bump-in and bump-out periods for assembling and dismantling temporary infrastructure associated with events;*
- *Temporary event camping associated with outdoor events (on event days and for up to one day prior to and after event days), with capacity for up to 30,000 campers a day (or the event patron capacity, whichever is lesser);*
- *Function and Conference centre with capacity for up to 180 attendees a day;*
- *Thirty (30) cabins for accommodation associated with the Functions/Conference centre, with capacity for up to 120 guests a day;*
- *Existing facilities and continued use of existing site infrastructure;*
- *Development and use of additional site infrastructure and facilities, including:*
 - *temporary event and camping infrastructure;*
 - *a conference centre and associated accommodation;*
 - *an administration building;*
 - *a permanent 'golden view' bar at the main amphitheatre.*
 - *event area facilities and works, including:*
 - *regrading/terracing of the main amphitheatre;*
 - *drainage improvement works;*
 - *potable water supply infrastructure;*
 - *sewerage infrastructure and additional amenities;*
 - *electrical and communication infrastructure (to conference centre and administration building); and*
 - *additional security fencing.*
 - *on-site road and transport facilities and works, including:*
 - *construction of the south-east carpark;*
 - *construction of roundabouts;*
 - *construction of southern pick-up and drop-off zones;*
 - *expansion of the transport hub;*
 - *Gate A works to improve public transport accessibility;*
 - *spine road upgrades (widening and sealing);*
 - *event laneway upgrades (rebuilding and sealing);*
 - *construction of additional on-site bus stops;*
 - *off-site road and transport facilities and works, including:*
 - *upgrade (sealing) of the northern access road to Wooyung Road; and*
 - *upgrade of the intersection of the northern access road and Wooyung Road*
- *Vegetation Enhancement Completion and maintenance of habitat restoration and vegetation management works*
- *Staging Construction of the proposed facilities and infrastructure would be staged / accordance with demand*
- *Capital Investment Value \$42 million (approx, excluding GST)*

The NSW RFS notes that part of the subject land is mapped bush fire prone land by Byron Shire Council. Further, NSW RFS is the primary response agency for fighting all structural fires within the site.

The NSW RFS requires further information to be submitted with the Environment Assessment (EA) documentation to permit a detailed bush fire assessment of the proposal.

The proponent is required to:

1. Submit a draft Fire Management Plan for the site. The plan shall include the following information:
 - I. A base map that incorporates all lands to be used as part of the application for any event. This shall include any external access roads and emergency assembly areas to the event plan;
 - II. Vegetation map that identifies vegetation communities both on and off site, including peat, that are subject to management actions from North Byron Parklands.
 - III. A bush fire prone land map that also identifies vegetation communities () within the base map;
 - IV. An event plan that identifies the various land uses within the event area including camping, entertainment (stages), other assembly areas (bars, food/drink, etc), service providers and other backhouse infrastructure;
 - V. An internal roads and pathways plan that delineates between public and or emergency access requirements from external public roads and internal access ways within the site;
 - VI. A water supply plan that identifies all the proposed fire fighting water supplies (static and reticulated) within the site and vehicle access hardstand areas;
 - VII. An asset protection zone plan (APZ) that identifies all land to be managed as an APZ before, during and after an event;
 - VIII. A defendable space plan (trafficable and non-trafficable plan that identifies the location of a minimum 10 metre setback to the nominated hazard;
 - IX. A bonfire location plan including radiant heat contour plan and management actions;
 - X. An on-site fire fighting resources plan including proposed warden locations and essential services (hose reels, extinguishes, etc);
 - XI. An hazardous materials plan that identifies location and storage of potentially hazardous materials (bulk fuel and gas storage, electrical generation facilities, hazardous chemicals, etc);
 - XII. An bush fire emergency evacuation assembly plan shall also identify additional resources required at the nominated assembly areas;
 - XIII. An emergency services location plan that includes proposed support infrastructure for on-site personnel and internal emergency response pathways.

Each plan above should be able to be 'layered' over the base map to provide a holistic picture of the development and its relationship to the identified bush fire hazard and proposed treatments.

Each plan should be accompanied with a written statement outlining the issues identified and treatments proposed. i.e. Emergency and Evacuation Assembly Area(s) – planned capacity and proposed resourcing. The emergency services plan should also address response times within the event area and dedicated communication plan for the wardens, site management and the various emergency services.

The extent of the event plan may change pending the scale of the event. Therefore, other attributes maybe 'scaled' to suit the proposed event site. The EA may contain individual fire assessment and treatment plans pending the scale of event.

On-site operational requirements can be addressed via an event based or annual Bush Fire Management Plan (BFMP), however the EA should demonstrate that operation resources could be mobilised during an event to respond to both bush and structural fires in an acceptable emergency response timeframe. To do this the site opportunities and constraints with respect to fire impacts and responses must be identified and addressed at the SSD application stage.

2. A detail camping plan, identifying proposed camping sites within each camping area. The plan should clearly identify both vehicle and pedestrian pathways around and through each camping area. The plan should also include proposed fire fighting water supply to each camping area and a fire fighting operation plan to address potential structural fires within the camping areas.
3. The inclusion of the proposed conference centre and cabins does not adequately address the requirements of *Planning for Bush Fire Protection 2006*. The proposed accommodation cabins are classified as Special Fire Protection Purpose development under S100B of the *Rural Fires Act 1997*. The accompanying bush fire report does not adequately justify why the proposed cabins cannot achieve a maximum 10 kW radiant heat exposure. The report does not provide adequate justification that the identified bush fire hazard cannot be managed or the cabins can be relocated further away from the identified bush fire hazard.

For any queries regarding this correspondence please contact Alan Bawden on 1300 NSW RFS.

Yours Sincerely



John Ball

Manager – Planning and Environment Services North

The RFS has made getting information easier. For general information on 'Planning for Bush Fire Protection, 2006', visit the RFS web page at www.rfs.nsw.gov.au and search under 'Planning for Bush Fire Protection, 2006'.



NSW RURAL FIRE SERVICE



The Secretary
NSW Planning & Environment
GPO Box 39
Sydney NSW 2001

Your Ref: MP 09_0028 MOD 3
Our Ref: D15/1567
DA17122110997 AB

ATTENTION: Pamela Morales

2 March 2018

Agency Comment: Major Project MP09_0028 MOD 3 Concept Approval - North Byron Parklands Cultural Events Site; Tweed Valley Way and Jones Road, Yelgun

Dear Ms Morales

I refer to your letter dated 15 December 2017 seeking bush fire protection advice from NSW Rural Fire Service (NSW RFS) regarding the above Major Projects modification of Concept Plan proposal in accordance with Part 3A of the 'Environmental Planning and Assessment Act 1979'.

The NSW RFS has reviewed the application including the associated documentation *and* understands the modification proposal seeks approval for:

- Change the approval from a trial event to a permanent cultural events site; and
- Increase total patron capacity from 35,000 to 50,000 for the approved 2 large events per year
- Increase the number of camping patrons from 25,000 to 30,000 for the approved 2 large events per year.

The NSW RFS notes that part of the subject land is mapped bush fire prone land by Byron Shire Council. Further NSW RFS is the primary response agency for fighting all structural fires within the site.

The NSW RFS, in principle, supports the proposed modification application, pending that the proponent is able to obtain State Significant Development approval from the Minister of Planning and Environment for use of the site from August 2019 for cultural event purposes.

For any queries regarding this correspondence please contact Alan Bawden on 1300 NSW RFS.

Postal address

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Yours Sincerely

A handwritten signature in black ink, appearing to read 'John Ball', written in a cursive style.

John Ball

Manager – Planning and Environment Services North

The RFS has made getting information easier. For general information on 'Planning for Bush Fire Protection, 2006', visit the RFS web page at www.rfs.nsw.gov.au and search under 'Planning for Bush Fire Protection, 2006'.



abn: 56 291 496 553
6 Porter Street, Byron Bay, NSW, 2481
PO Box 538, Lennox Head, NSW, 2478
Telephone: 1300 66 00 87

23rd May 2018
Our reference: 1287.2314a

Mr Peter Thornton
Bushfire Certifiers
PO Box 375
LENNOX HEAD NSW 2478

Dear Peter

RE: Concept Plan approval for North Byron Parklands

I refer to our discussions on 13th March 2018 and my letter for 26th March, 2018 in relation to the Concept Approval applicable to North Byron Parklands. Attached is a copy of the Concept Approval for your information. As discussed in our meeting, Development Applications are only permissible where they are consistent with the terms of a Concept Approval. The Concept Approval for the North Byron Parklands site designates the bulk of the site for events usage and a small portion of the site south and south west of the existing dam for the location of a conference facility and associated accommodation. The form of the accommodation associated with the conference facility approved under the Concept Approval for the North Byron Parklands was "cabin style".

To be consistent with the concept Approval (and therefore permissible with Development Consent) a conference centre and associated accommodation proposal must be located generally in the area illustrated in the Concept Approval plan attached. Because the "extent of application area" in the north western part of the site extends to the north west boundaries, some latitude is open in the Concept Approval for the conference facility and associated accommodation to "creep" a little to the north west, but that is the only latitude the Concept Approval affords.

Should you require any additional information or wish to clarify any matter raised by this advice, please feel free to contact the writer at any time.

Yours faithfully,

PLANNERS NORTH

Stephen Connelly RPIA (Fellow)

PARTNERSHIP PRINCIPAL
(m) 0419 237 982
(e) steve@plannersnorth.com.au



Refer to the Ecological Structure Plan for 'Existing Vegetation to be Protected', 'Proposed New Habitat Areas', 'Proposed New Managed Parklands' and 'Land proposed to be dedicated to DECC'.

0 150m



Legend:

- The Site
- Extents of Application Area (Dashed)
- Event Area
- Conference Centre Uses
- Cultural Centre/Administration Uses
- Car Parking
- Gatehouse
- Spine Road (7m wide)
- Event access lane (6m wide)
- Main pedestrian route

IMPORTANT NOTE
Cadastral information is subject to survey. The alignment of the aerial photography and vectorial overlays is approximate only.

Prepared by
PJEP & Planners North

Sources | Drawing 1.2 Event Area Landuse Structure, 13.10.2014E, Ecological Australia BAR Report |
Aerial: Bill Mills (2009) | Cadastre: Ardill Payne (2009) |

Figure | 2.4
Approved
Land Use Structure Plan

North Byron Parklands | Tweed Valley Way & Jones Road

Date November 2017

Author Planners North
Reference 1287.1694

Concept Plan Approval

Section 750 of the *Environmental Planning and Assessment Act 1979*

Under delegation of the Minister for Planning and Infrastructure dated 14 September 2011, the Planning Assessment Commission determines to give approval to the concept plan referred to in Schedule 1, pursuant to section 750 of the *Environmental Planning and Assessment Act 1979*, subject to the terms referred to in Schedule 2 and the proponent's Statement of Commitments in Schedule 3.

The reasons for the imposition of these terms are to:

- ensure the site is appropriately managed for the proposed use;
- adequately mitigate the environmental, construction, and operational impacts of the development;
- reasonably protect the amenity of the local area and surrounding communities; and,
- protect the public interest.



Kevin Sproats
Member of the Commission



Donna Campbell
Member of the Commission

Sydney 24 April 2012

SCHEDULE 1

Application No.:	MP 09_0028
Proponent:	Billinudgel Property Pty Ltd
Approval Authority:	Minister for Planning and Infrastructure
Land:	Lots 46, 402, 403, 404, 410 DP 755687; Lots 10, 12, 14 DP 875112; Lots 2, 12 DP 848618; Lot 101 DP 856767; Lots 30, 31 DP 880376; Lots 101, 102, 107 DP 1001878; and Lot 1 DP 1145020, Tweed Valley Way and Jones Road, Yelgun – Byron local government area.
Project:	Cultural Events Site, comprising: • Use of the site for cultural, educational and outdoor events with ancillary camping and car parking; • Temporary event infrastructure; • A spine road; • A water treatment plant; • A wastewater treatment plant; • A cultural centre; • A conference centre and associated accommodation; and, • A comprehensive vegetation management plan.

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PART A–NOTES RELATING TO THE DETERMINATION OF 09_0028

Responsibility for other consents / agreements

The Proponent is solely responsible for ensuring that all additional consents and agreements are obtained from other authorities, as relevant.

Appeals

The Proponent has the right to appeal to the Land and Environment Court in the manner set out in the *Environmental Planning and Assessment Act 1979* and the *Environmental Planning and Assessment Regulation 2000*.

PART B–DEFINITIONS

In this approval,

Act means the *Environmental Planning and Assessment Act 1979*.

Advisory Notes means advisory information relating to the approved development but do not form a part of this approval.

BCA means Building Code of Australia.

Construction Certificate means a construction certificate for bulk earthworks or civil works unless specified otherwise.

Council means Byron Shire Council.

Department means the Department of Planning and Infrastructure or its successors.

Director-General means the Director-General of the Department.

Environmental Assessment means the Environmental Assessment prepared by SJ Connelly CPP Pty Ltd and dated August 2010, including all Appendices.

Minister means the Minister for Planning and Infrastructure.

Project means the project as described in Term A1 of this approval.

PCA means a Principal Certifying Authority and has the same meaning as Part 4A of the Act.

Preferred Project Report means the Preferred Project Report prepared by SJ Connelly CPP Pty Ltd dated February 2011.

Proponent means Billinudgel Property Pty Ltd or any party acting upon this approval.

Regulation means the *Environmental Planning and Assessment Regulation 2000*.

Site has the same meaning as the land identified in Schedule 1.

End of Schedule 1

SCHEDULE 2

PART A – TERMS OF APPROVAL

A1 Concept plan approval

- 1) Concept plan approval is granted to use the site for outdoor, cultural or educational events with ancillary event camping and car parking.
- 2) The project infrastructure and works are to be developed as generally described in the following three (3) stages:

Stage 1

- (a) A spine road, shuttle bus turnaround area and ancillary event laneways;
- (b) Upgrading of Jones Road;
- (c) An underpass beneath Jones Road;
- (d) Ancillary temporary structures; and
- (e) Implementation of a comprehensive vegetation management plan.

Stage 2

- (a) An administration building;
- (b) A gatehouse building;
- (c) A water treatment facility; and
- (d) A wastewater treatment facility.

Stage 3

- (a) A cultural centre;
- (b) A conference centre for a maximum of 180 guests and accommodation for 60 guests; and
- (c) Finalisation of the vegetation management plan.

A2 Project in accordance with documentation

The proponent shall carry out the concept plan and all related future projects generally in accordance with the following documents except as modified by this approval:

- 1) *Environmental Assessment* prepared by SJ Connelly CPP Pty Ltd on behalf of North Byron Parklands, dated August 2010;
- 2) *Reply to Submissions and Preferred Project Report* prepared by SJ Connelly CPP Pty Ltd on behalf of North Byron Parklands, dated February 2011;
- 3) *Flood Risk Management Plan* prepared by Molino Stewart on behalf of North Byron Parklands (Billinudgel Property Pty Ltd), dated June 2011; and
- 4) *Environmental Health and Safety Management Manual* prepared by North Byron Parklands, dated August 2010.

A3 Project in accordance with plans

The proponent shall carry out the concept plan and all related future projects applications generally in accordance with the following plans:

Design Drawings prepared by Design Team Ink		
Drawing No.	Name of Plan	Date
Plan EA 1.2	Revised Event Area and Land Use Structure	14.12.10
Plan EA 1.3	Revised Ecological Structure Plan	14.12.10

A4 Consistency of future development

- 1) In the event of any inconsistency between:
 - a) this approval and the drawings/documents referred to in terms A2 and A3, this approval prevails to the extent of the inconsistency;
 - b) any drawing/document listed in terms A2 and A3 and any other drawing/document listed in terms A2 and A3, the most recent document/ plan shall prevail to the extent of the inconsistency;
 - c) this approval and the Statement of Commitments (at Schedule 3), this approval prevails to the extent of the inconsistency.
- 2) If there is any inconsistency between this concept plan approval and any future application/ project, this concept plan approval shall prevail to the extent of the inconsistency.

A5 Lapsing of approval

This concept plan approval shall lapse five (5) years after the date of this approval, unless works the subject of the project approval for Stage 1 have physically commenced on or before that lapse date.

PART B – MODIFICATIONS TO THE CONCEPT PLAN

B1 Definitions

In this approval -

small trial event is an outdoor event the first trial for which is proposed for up to 10,000 patrons per day;

medium trial event is an outdoor event the first trial for which is proposed for between 10,000 and 15,000 patrons per day;

large trial event is an outdoor event the first trial event for which is proposed for between 15,000 and 25,000 patrons per day;

patron means anyone who holds a ticket to attend an outdoor event;

event day means any day that is an advertised date on the face of an entry ticket for a trial event;

camper arrival day for a trial event, means the day immediately before the first event day, being a day on which camper patrons are permitted to arrive at the site.

camper departure day for a trial event, means the day immediately after the last event day, being a day on which camper patrons are permitted to depart from the site.

B2 Trial period for outdoor events

- 1) Concept approval is granted for a trial period up to the end of 2017.
- 2) The Director- General may approve up to 3 trial events each calendar year, being one large trial event, one medium trial event and one small trial event. The Director-General may also approve additional small or medium events in place of a larger trial event during any calendar year so long as the number of trial events for the year does not exceed 3.
- 3) The total event days for each calendar year must not exceed 10 days. The total camper arrival and departure days each calendar year must not exceed 6 days.
- 4) The maximum number of patrons that may be approved for each large, medium or small trial event depends on the number of trials that have been held of events in that class, as set out in the Table below.

Number of trial	Large trial event	Medium trial event	Small trial event
First trial	Up to 25,000 patrons	Up to 15,000 patrons	Up to 10,000 patrons
Second trial	Up to 27,500 patrons	Up to 17,500 patrons	Up to 12,000 patrons
Third trial	Up to 30,000 patrons	Up to 20,000 patrons	Up to 13, 000 patrons
Fourth trial	Up to 32,500 patrons	Up to 22,500 patrons	Up to 14,000 patrons
Fifth trial	Up to 35,000 patrons	Up to 25,000 patrons	Up to 15,000 patrons

B3 Approval process for trial events

The process for approving trial events, including the Director – General's powers to limit or regulate trial events, must be set out in the project approval for the trial period.

B4 Outdoor events after 2017

- 1) Concept approval is given for outdoor events after 2017 for up to 35,000 patrons per event day subject to the satisfactory performance of the trial events.
- 2) The Stage 2 works must be completed prior any outdoor event after 2017.

B5 Modifications to on-site effluent irrigation

To ensure the protection of existing groundwater conditions and adjoining environments, no on-site effluent irrigation is to occur on land south of Jones Road. The proponent must provide suitable areas for on-site effluent irrigation on land north of Jones Road, without introducing any adverse environmental impacts.

PART C – REQUIREMENTS FOR FUTURE APPLICATIONS

Pursuant to sections 75P(2)(c) of the Act the following requirements apply, as relevant, with respect to future stages of the project to be assessed under Part 4 of the Act:

C1 Outdoor events after 2017

- 1) The performance of trial outdoor events must be addressed as part of any development application under Part 4 for outdoor events after 2017.

-
- 2) Any development application for outdoor events after 2017 must be accompanied by an environmental management and monitoring plan that details the management strategies, monitoring regimes and regular reporting on the following matters:
 - noise
 - traffic and transport
 - flora and fauna
 - bushfire
 - flood
 - surface water
 - event management.
 - 3) The Stage 2 works must be completed before any outdoor events are held after 2017.

C2 Additional flood modelling

The following matters are to be addressed as part of any development application for the proposed conference centre and cultural centre:

- 1) The proponent must undertake further flood modelling of the site at a localised/catchment level with the aid of a detailed hydrological and hydraulic model prior to the construction of the conference centre and/or cultural centre.
- 2) The additional flood modelling must take into consideration the existing flood behaviour of the site and climate change requirements and provide an indication of any further flood impacts anticipated as a result of the constructed conference centre and/or cultural centre.
- 3) The proponent must submit details of an appropriate drainage system designed around these proposed facilities, including incorporation of water sensitive urban design measures.
- 4) Any future drainage systems introduced must not generate any detrimental impacts on the sites existing infrastructure.
- 5) Any future drainage systems introduced must not exacerbate the sites existing flood regime, or exacerbate the impacts of flooding on any land adjoining the site.

C3 Habitable floor levels

Floor levels of all permanent habitable structures proposed as part of any future development application must be constructed a minimum of 500mm above the 100 year ARI flood level including relevant climate change requirements applying at the time of lodgement of the development applications.

End of Schedule 2

Mark Fitzgerald Ecological Consultant

Ph.D., B. AppSci

Flora and Fauna Assessment, Fauna Survey, Ecological Impact Assessment

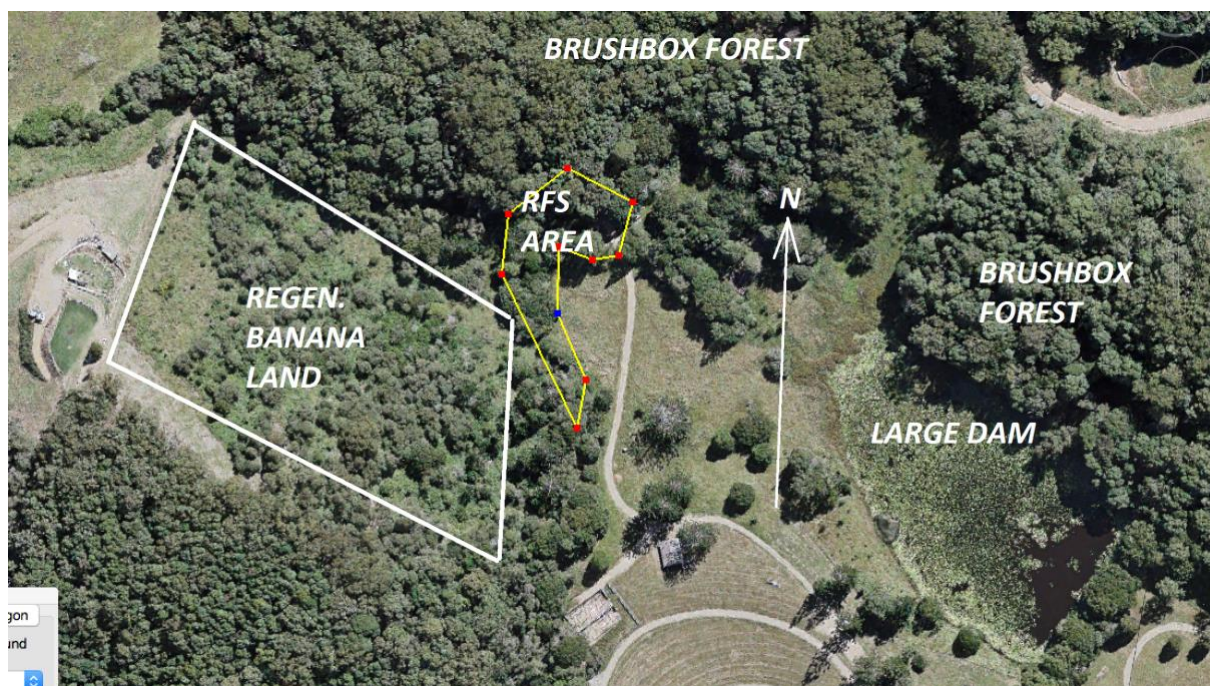
markfitz448@gmail.com; PO Box 237 Mullumbimby

RFS Fuel Reduction Requirement North Byron Parklands

INTRODUCTION

Consideration of the proposed construction of conference cabins for the North Byron Parklands (NBP) site by the NSW Rural Fire Service (RFS) resulted in a recommendation to clear vegetation to reduce bushfire risk. NBP management requested an assessment of the ecological attributes of the vegetation. An irregular shaped polygon encloses the relevant area in the central western area of the NBP site as depicted in Figure 1. Figure 2 shows the location of the area in the NBP property.

Figure 1: RFS area of concern



Source GoogleEarth. Scale 1 : 4 800

Figure 2: Location of study area in North Byron Parklands



Source GoogleEarth. Scale 1; 20 250

METHODS

The area of interest (the 'study area') was inspected by ecologist Dr Mark Fitzgerald on Thursday April 5th 2018. A mapped polygon (Figure 1) was used to identify the area, and reconnaissance of the area was undertaken to determine its approximate boundaries. Threatened flora of the site were identified, notes and photographs were taken of vegetation, and the immediate surrounds of the site were also surveyed.

RESULTS

GEOLOGY SOILS TOPOGRAPHY

The study area is a moderate to steeply sloping area at the toe of a steep slope. It has an irregular shape and an area of approximately 0.4 ha or 400 square metres.

The site is on metamorphic derived soils, which are grey to dark grey clayey loams. Upper parts of the slope to the west have abundant angular surface rocks. Elevation is ~10m AHD.

Lower parts of the area are slashed, and an extensive area of slashed and mown grassland adjoins to the southeast. A large (~1.8ha) dam is present to the east, and a smaller overgrown dam is located within the study area. Seepage from the sloping lands to the west feeds both dams and a drainage line is present in the study area.

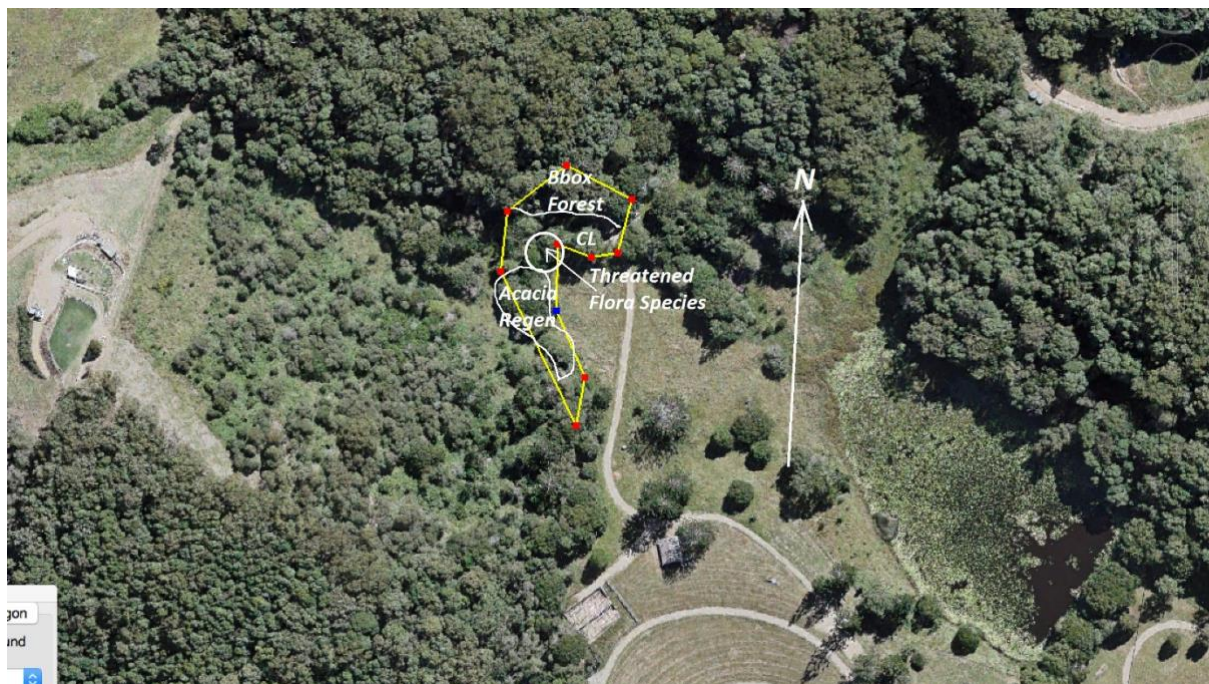
VEGETATION & PAST LANDUSES

Vegetation present reflects differing historical landuses. Forested areas to the north and northeast of the study area are ~80-100 year old native regrowth dominated by Brush Box *Lophostemon conferta*) with emergent Hoop Pines (*Araucaria cunninghamiana*) and Blackbutt (*Eucalyptus pilularis*) over a developing rainforest understorey, and with few exotic species present.

Areas to the south and east of the study area which are now closely mown and slashed were historically cattle paddocks on the Crabbe's Creek floodplain. The steep slope to the west appears to have been used for banana cultivation, indicated by the presence of old roadways and a stock fence, and now supports 30-40 year old regrowth dominated by two Acacia species: Sally Wattle or Blackwood *Acacia melanoxylon* and Brush Ironbark Wattle *Acacia disparrima*. Macaranga is also present over a weedy understory of Lantana, Croftonweed, Mistflower, Broadleaf Paspalum and Molasses Grass. See Appendix A for a flora species list of the site.

Camphor Laurel is present, especially at the ecotone between the native forest and the former pasture areas.

Figure 3: Vegetation of the study area



THREATENED FLORA SPECIES

Two Threatened Flora species are present in the study area and vicinity: five mature Coolamon trees are clustered near the centre of the study area, with a mature Green-leaved Rose Walnut nearby. A second Green-leaved Rose Walnut is located to the north of the drainage line, possibly outside the study area. Table 1 lists the status of the two Threatened Flora species.

Table 1: Coolamon and Green-leaved Rose Walnut status

Common Name	Scientific Name	NSW BC Act status*	Federal EPBC Act status**
Coolamon or Durobby	<i>Syzygium moorei</i>	Vulnerable	Vulnerable
Green-leaved Rose Walnut	<i>Endiandra muelleri</i> <i>ssp. bracteata</i>	Endangered	Not listed

* Biodiversity Conservation Act 2016 (NSW)

** Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)

THREATENED FAUNA SPECIES

Approximately 20 species of microchiropteran bats have been recorded from the large dam to the east of the study area. This includes 9 threatened species with Southern Myotis likely fishing for aquatic invertebrates, small fish and tadpoles from the dam, and the following threatened species drinking from, and taking insects around the dam: Golden-tipped Bat, Large-eared Pied Bat, Eastern Long-eared Bat, Eastern Falsistrelle, Eastern Freetail-bat, Little and Eastern Bentwing-bats, and Yellow-bellied Sheathail Bat.

Grey-headed Flying-foxes, Rose-crowned Fruit-doves and White-eared Monarchs are other threatened fauna species likely to be present at times. The Eastern Osprey and Comb-crested Jacana have been recorded close to the study area.

ECOLOGICAL ATTRIBUTES OF THE STUDY AREA

The study area is in an ecotone between grassland and forest and has both features present. Areas of slashed grassland are present beneath tree canopies. Native forest habitats surrounding the site are of high ecological value and are regionally significant in the context of contemporary Byron Shire. A small drainage line running through the study area supplies water to the large dam.

Fauna monitoring at NBP since 2007 has consistently demonstrated the ecological importance of forested habitats on the NBP site, including areas with the exotic weed Camphor Laurel present. The future sustainability of coastal floodplain forest ecosystems and their fauna depends upon the maintenance and increase in native forest cover wherever possible. Therefore, any proposal to clear vegetation represents potential loss and/or degradation of habitats, creation of edge effects (*e.g.* weed invasion) and warrants careful consideration.

VEGETATION MANAGEMENT FOR BUSHFIRE RISK

Threatened Flora present in the study area has high ecological value, and land use planning decisions should have consideration for the legislative objectives of conservation and protection of such vegetation. Brushbox forest north of the drainage line is also important

native habitat, being largely free of weeds, with an intact canopy, established rainforest understorey and mid-layer structure.

The younger Acacia forest incorporates a variably weedy understorey and ground layer and represents a 'pioneer' phase in forest regeneration. In the absence of management, it appears likely to be colonised by a mix of exotic trees and native rainforest pioneers.

It is considered possible to considerably reduce ground fuel loads in the area by selective removal of Lantana and woody material from within the lower margins of the Acacia forest. Careful and selective removal of Camphor Laurels in the area may further reduce bushfire risk. Maintenance of a mowing or slashing regime to establish a low grassland and prevent the growth of woody weeds would also reduce ground fuel loads.

CONCLUSION

The study area considered includes 5 mature threatened Coolamons and a Green-leaved Rose Walnut. A second Green-leaved Rose Walnut is located nearby. The conservation significance of these species is reflected in their state and federal conservation statuses. Coolamon is listed both vulnerable under the Commonwealth EPBC Act and the NSW BC Act, whilst the Green-leaved Rose Walnut is listed as endangered under the BC Act.

A small drainage line running through the study area supplies water to the large dam. Native Brush Box forests to the north and east are of high ecological value and are regionally significant habitats.

Any proposal to clear vegetation in the study area needs to incorporate considerations of ecosystem sustainability and the importance of retaining native vegetation wherever possible.

The Byron Biodiversity Conservation Strategy (2004) "No Nett Vegetation Loss" provisions require compensatory plantings for the loss of native vegetation.



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Appendix A: Flora species of the study area * indicates exotic species

= threatened species

Common Name	Scientific name
A Muttonwood	<i>Rapanea howittiana</i>
Apple of Sodom	<i>Solanum linneaeum</i>
Austral Sarsaparilla	<i>Smilax australis</i>
Banana Bush	<i>Ervatamia angustisepala</i>
Bangalow Palm	<i>Archontophoenix cunninghamiana</i>
Billygoat weed	<i>Ageratum houstonianum</i> *
Binung	<i>Christella dentata</i>
Black Nightshade	<i>Solanum nigrum</i> *
Blackbutt	<i>Eucalyptus pilularis</i>
Blackwood	<i>Acacia melanoxylon</i>
Bleeding Heart	<i>Homolanthus populifolius</i>
Blood Flower	<i>Asclepias curassavica</i> *
Blue Flax-lily	<i>Dianella caerulea</i>
Bolly Gum	<i>Litsea reticulata</i>
Broad-leaved Palm Lily	<i>Cordyline petiolaris</i>
Broad-leaved Paperbark	<i>Melaleuca quinquenervia</i>
Broadleaf Paspalum	<i>Paspalum wettsteinii</i> *
Brush Box	<i>Lophostemon confertus</i>
Brush Ironbark Wattle	<i>Acacia disparrima</i>
Camphor Laurel	<i>Cinnamomum camphora</i> *
Celerywood	<i>Polyscias elegans</i>
Cheese Tree	<i>Glochidion ferdinandi</i>
Coastal Cypress pine	<i>Callitris columellaris</i>
Cockspur	<i>Maclura cochinchinensis</i>
Coolamon#	<i>Syzygium moorei</i>
Common Guava	<i>Psidium guajavum</i> *
Common Silkpod vine	<i>Parsonsia straminea</i>
Corky Passionfruit	<i>Passiflora suberosa</i> *
Crofton Weed	<i>Ageratina adenophora</i> *
Cudgerie	<i>Flindersia schottiana</i>
Cuphea	<i>Cuphea carthagenensis</i> *
False Bracken	<i>Calochlaena dubia</i>
Felt Fern	<i>Pyrrosia rupestris</i>
Fleabane	<i>Coryza bonariensis</i> *
Foambark	<i>Jagera pseudorhus</i>
Forest Maple	<i>Cryptocarya rigida</i>
Giant Paspalum	<i>Paspalum urvillei</i> *
Green-leaved Rose Walnut#	<i>Endiandra muelleri ssp bracteata</i>
Guioa	<i>Guioa semiglauc</i>
Hairy Psychotria	<i>Psychotria loniceroides</i>
Hoop Pine	<i>Araucaria cunninghamii</i>

Lantana	<i>Lantana camara*</i>
Large Prickle Vine	<i>Caesalpinia scortechinii</i>
Lilly-pilly	<i>Acmena smithii</i>
Macaranga	<i>Macaranga tanarius</i>
Maidenhair Fern	<i>Adiantum hispidulum</i>
Mistflower	<i>Ageratina riparia*</i>
Molasses Grass	<i>Melinis minutifolius*</i>
Morinda	<i>Morinda jasminoides</i>
Muttonwood	<i>Rapanea variabile</i>
Narrow-leaved Cottonbush	<i>Gomphocarpus fruticosus*</i>
Native Ginger	<i>Alpinia caerulea</i>
Paspalum	<i>Paspalum dilatatum</i>
Pink Doughwood	<i>Melicope elleryana</i>
Plum Myrtle	<i>Pillidiostigma glabrum</i>
Red Kamala	<i>Mallotus philippensis</i>
Red-fruited Palm Lily	<i>Cordyline rubra</i>
Red-fruited Rice Flower	<i>Wikstroemia indica</i>
Rose Myrtle	<i>Archirhodomyrtus beckleri</i>
Rose Walnut	<i>Endiandra discolor</i>
Rose-leaf Bramble	<i>Rubus rosifolius</i>
Rosewood	<i>Dysoxylum fraserianum</i>
Sandfly Bush	<i>Zieria smithii</i>
Sandpaper Fig	<i>Ficus coronata</i>
Scentless Rosewood	<i>Synoum glandulosum</i>
Scrambling Guinea Flower	<i>Hibbertia scandens</i>
Scrambling Lily	<i>Geitonoplesium cymosum</i>
Scrub Turpentine	<i>Rhodamnia rubescens</i>
Sickle Fern	<i>Pellea falcata</i>
Staghorn	<i>Platynerium superbum</i>
Straw Treefern	<i>Cyathea cooperi</i>
Supplejack	<i>Ripogonum album</i>
Sweet Pittosporum	<i>Pittosporum undulatum</i>
Sweet Sarsaparilla	<i>Smilax glycyphylla</i>
Tall Verbena	<i>Verbena bonariensis*</i>
Tree-heath	<i>Trochocarpa laurina</i>
Tuckeroo	<i>Cupaniopsis anacardioides</i>
Umbrella Cheese Tree	<i>Glochidion sumatranum</i>
Umbrella Tree	<i>Schefflera actinophylla*</i>
Veiny Wilkea	<i>Wilkea huegeliana</i>
Water Vine	<i>Cissus antarctica</i>
Wild Tobacco	<i>Solanum mauritianum*</i>
Winter Senna	<i>Senna pendula*</i>
Yellow Pearfruit	<i>Mischocarpus pyriformis</i>

Appendix B: Site Photographs

(i) Threatened flora Coolamons



(ii) Coolamon Foliage



(iii) Threatened flora Green-leaved Rose Walnut foliage



(iv) Drainage line



(v) Brush Box Forest



(vi) Acacia Forest

