



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Referral of proposed action

What is a referral?

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) provides for the protection of the environment, especially matters of national environmental significance (NES). Under the EPBC Act, a person must not take an action that has, will have, or is likely to have a significant impact on any of the matters of NES without approval from the Australian Government Environment Minister or the Minister's delegate. (Further references to 'the Minister' in this form include references to the Minister's delegate.) To obtain approval from the Environment Minister, a proposed action should be referred. The purpose of a referral is to obtain a decision on whether your proposed action will need formal assessment and approval under the EPBC Act.

Your referral will be the principal basis for the Minister's decision as to whether approval is necessary and, if so, the type of assessment that will be undertaken. These decisions are made within 20 business days, provided that sufficient information is provided in the referral.

Who can make a referral?

Referrals may be made by or on behalf of a person proposing to take an action, the Commonwealth or a Commonwealth agency, a state or territory government, or agency, provided that the relevant government or agency has administrative responsibilities relating to the action.

When do I need to make a referral?

A referral must be made for actions that are likely to have a significant impact on the following matters protected by Part 3 of the EPBC Act:

- World Heritage properties (sections 12 and 15A)
- National Heritage places (sections 15B and 15C)
- Wetlands of international importance (sections 16 and 17B)
- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (sections 20 and 20A)
- Protection of the environment from nuclear actions (sections 21 and 22A)
- Commonwealth marine environment (sections 23 and 24A)
- Great Barrier Reef Marine Park (sections 24B and 24C)
- The environment, if the action involves Commonwealth land (sections 26 and 27A), including:
 - actions that are likely to have a significant impact on the environment of Commonwealth land (even if taken outside Commonwealth land);
 - actions taken on Commonwealth land that may have a significant impact on the environment generally;
- The environment, if the action is taken by the Commonwealth (section 28)
- Commonwealth Heritage places outside the Australian jurisdiction (sections 27B and 27C)

You may still make a referral if you believe your action is not going to have a significant impact, or if you are unsure. This will provide a greater level of certainty that Commonwealth assessment requirements have been met.

To help you decide whether or not your proposed action requires approval (and therefore, if you should make a referral), the following guidance is available from:

- the Policy Statement titled Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Additional sectoral guidelines are also available.
- the Policy Statement titled Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies.

- the interactive map tool (enter a location to obtain a report on what matters of NES may occur in that location).

Can I refer part of a larger action?

In certain circumstances, the Minister may not accept a referral for an action that is a component of a larger action and may request the person proposing to take the action to refer the larger action for consideration under the EPBC Act (Section 74A, EPBC Act). If you wish to make a referral for a staged or component referral, read 'Fact Sheet 6 Staged Developments/Split Referrals' and contact the Referral Business Entry Point (1800 803 772).

Do I need a permit?

Some activities may also require a permit under other sections of the EPBC Act or another law of the Commonwealth. Information is available on the Department's web site.

Is your action in the Great Barrier Reef Marine Park?

If your action is in the Great Barrier Reef Marine Park it may require permission under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). If a permission is required, referral of the action under the EPBC Act is deemed to be an application under the GBRMP Act (see section 37AB, GBRMP Act). This referral will be forwarded to the Great Barrier Reef Marine Park Authority (the Authority) for the Authority to commence its permit processes as required under the Great Barrier Reef Marine Park Regulations 1983. If a permission is not required under the GBRMP Act, no approval under the EPBC Act is required (see section 43, EPBC Act). The Authority can provide advice on relevant permission requirements applying to activities in the Marine Park.

The Authority is responsible for assessing applications for permissions under the GBRMP Act, GBRMP Regulations and Zoning Plan. Where assessment and approval is also required under the EPBC Act, a single integrated assessment for the purposes of both Acts will apply in most cases. Further information on environmental approval requirements applying to actions in the Great Barrier Reef Marine Park is available from <http://www.gbrmpa.gov.au/> or by contacting GBRMPA's Environmental Assessment and Management Section on (07) 4750 0700.

The Authority may require a permit application assessment fee to be paid in relation to the assessment of applications for permissions required under the GBRMP Act, even if the permission is made as a referral under the EPBC Act. Further information on this is available from the Authority:

Great Barrier Reef Marine Park Authority

2-68 Flinders Street PO Box 1379

Townsville QLD 4810

AUSTRALIA

Phone: + 61 7 4750 0700

Fax: + 61 7 4772 6093

www.gbrmpa.gov.au

What information do I need to provide?

Completing all parts of this form will ensure that you submit the required information and will also assist the Department to process your referral efficiently.

You can complete your referral by entering your information into this Word file.

Instructions

Instructions are provided in green text throughout the form.

Attachments/supporting information

The referral form should contain sufficient information to provide an adequate basis for a decision on the likely impacts of the proposed action. You should also provide supporting documentation, such as environmental reports or surveys, as attachments.

Coloured maps, figures or photographs to help explain the project and its location should also be submitted with your referral. Aerial photographs, in particular, can provide a useful perspective and context. Figures should be good quality as they may be scanned and viewed electronically as black and white documents.

Maps should be of a scale that clearly shows the location of the proposed action and any environmental aspects of interest.

Please ensure any attachments are below two megabytes (2mb) as they will be published on the Department's website for public comment. To minimise file size, enclose maps and figures as separate files if necessary. If unsure, contact the Referral Business Entry Point for advice. Attachments larger than two megabytes (2mb) may delay processing of your referral.

Note: the Minister may decide not to publish information that the Minister is satisfied is commercial-in-confidence.

How do I submit a referral?

Referrals may be submitted by mail, fax or email.

Mail to:

Referral Business Entry Point
Environment Assessment Branch
Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787
CANBERRA ACT 2601

- If submitting via mail, electronic copies of documentation (on CD/DVD or by email) are appreciated.

Fax to: 02 6274 1789

- Faxed documents must be of sufficiently clear quality to be scanned into electronic format.
- Address the fax to the mailing address, and clearly mark it as a 'Referral under the EPBC Act'.
- Follow up with a mailed hardcopy including copies of any attachments or supporting reports.

Email to: epbc.referrals@environment.gov.au

- Clearly mark the email as a 'Referral under the EPBC Act'.
- Attach the referral as a Microsoft Word file and, if possible, a PDF file.
- Follow up with a mailed hardcopy including copies of any attachments or supporting reports.

What happens next?

Following receipt of a valid referral (containing all required information) you will be advised of the next steps in the process, and the referral and attachments will be published on the Department's web site for public comment.

The Department will write to you within 20 business days to advise you of the outcome of your referral and whether or not formal assessment and approval under the EPBC Act is required. There are a number of possible decisions regarding your referral:

The proposed action is NOT LIKELY to have a significant impact and does NOT NEED approval

No further consideration is required under the environmental assessment provisions of the EPBC Act and the action can proceed (subject to any other Commonwealth, state or local government requirements).

The proposed action is NOT LIKELY to have a significant impact IF undertaken in a particular manner

The action can proceed if undertaken in a particular manner (subject to any other Commonwealth, state or local government requirements). The particular manner in which you must carry out the action will be identified as part of the final decision. You must report your compliance with the particular manner to the Department.

The proposed action is LIKELY to have a significant impact and does NEED approval

If the action is likely to have a significant impact a decision will be made that it is a *controlled action*. The particular matters upon which the action may have a significant impact (such as World Heritage values or threatened species) are known as the *controlling provisions*.

The controlled action is subject to a public assessment process before a final decision can be made about whether to approve it. The assessment approach will usually be decided at the same time as the controlled action decision. (Further information about the levels of assessment and basis for deciding the approach are available on the Department's web site.)

The proposed action would have UNACCEPTABLE impacts and CANNOT proceed

The Minister may decide, on the basis of the information in the referral, that a referred action would have clearly unacceptable impacts on a protected matter and cannot proceed.

Compliance audits

If a decision is made to approve a project, the Department may audit it at any time to ensure that it is completed in accordance with the approval decision or the information provided in the referral. If the project changes, such that the likelihood of significant impacts could vary, you should write to the Department to advise of the changes. If your project is in the Great Barrier Reef Marine Park and a decision is made to approve it, the Authority may also audit it. (See "*Is your action in the Great Barrier Reef Marine Park*," p.2, for more details).

For more information

- call the Department of Sustainability, Environment, Water, Populations and Communities Community Information Unit on 1800 803 772 or
- visit the web site www.environment.gov.au/epbc

All the information you need to make a referral, including documents referenced in this form, can be accessed from the above web site.

Referral of proposed action

Project title: Jumrum Rainforest Estate

1 Summary of proposed action

NOTE: You must also attach a map/plan(s) showing the location and approximate boundaries of the area in which the project is to occur. Maps in A4 size are preferred. You must also attach a map(s)/plan(s) showing the location and boundaries of the project area in respect to any features identified in 3.1 & 3.2, as well as the extent of any freehold, leasehold or other tenure identified in 3.3(i).

1.1 Short description

Use 2 or 3 sentences to uniquely identify the proposed action and its location.

The Jumrum Rainforest Estate is a proposed rural residential sub-division of 45.71 ha of freehold land, on Lot 72 on RP903071, into 84 lots, with an average size of 4886 m². Construction of internal roads, drainage structures and two significant waterway crossings (across Jumrum Creek), will also occur. Access is via Fallon Road, Kuranda off the Kennedy Highway in North Queensland (See Figure 1).

1.2 Latitude and longitude

Latitude and longitude details are used to accurately map the boundary of the proposed action. If these coordinates are inaccurate or insufficient it may delay the processing of your referral.

location point	Latitude			Longitude		
	degrees	minutes	seconds	degrees	minutes	seconds
SW Cnr on Hwy	-16.84319			145.624251		
RP on Hwy	-16.84155			145.61187		
RP on Hwy	-16.83966			145.61543		
W Cnr on Hwy	-16.836952			145.61854		
Internal Cnr	-16.839376			145.62077		
Internal Cnr.	-16.83691			145.62232		
NW Cnr Fallon Rd	-16.83551			145.62283		
NE Cnr Fallon Rd	-16.8357			145.625		
SW Cnr	-16.84106			145.62463		

The Interactive Mapping Tool may provide assistance in determining the coordinates for your project area.

If area less than 5 hectares, provide the location as a single pair of latitude and longitude references. If area greater than 5 hectares, provide bounding location points.

If the proposed action is linear (eg. a road or pipeline), provide coordinates for each turning point.

Do not use AMG coordinates.

1.3 Locality and property description

Provide a brief physical description of the property on which the proposed action will take place and the project location (eg. proximity to major towns, or for off-shore projects, shortest distance to mainland).

Jumrum Estate is a freehold site located in the Wet Tropics Bioregion. It is traversed by a waterway and vegetated predominantly with regrowth vegetation, with a small portion of remnant vegetation located in the south eastern corner. The property is approximately 3 km south west of Kuranda in North Queensland and is bordered by Fallon Road to the north with the Kennedy Highway to the west (see Figure 1).

1.4 Size of the development footprint or work area (hectares)

The site area is 45.71 Ha
 The total development footprint is expected to cover 21.52 ha (Approximately 47% of the total site area).

1.5	Street address of the site	Fallon Road, Kuranda
1.6	Lot description Describe the lot numbers and title description, if known.	Lot 72 on RP903071
1.7	Local Government Area and Council contact (if known) If the project is subject to local government planning approval, provide the name of the relevant council contact officer.	Tablelands Regional Council Brian Millard Senior Planner
1.8	Time frame Specify the time frame in which the action will be taken including the estimated start date of construction/operation.	Timing will be largely determined by market forces, with construction occurring in the drier parts of the year, nominally between May and October. Current timing forecasts are as below: Start: June 2011 End: June 2015
1.9	Alternatives to proposed action Were any feasible alternatives to taking the proposed action (including not taking the action) considered but are not proposed?	X No
		Yes, you must also complete section 2.2
1.10	Alternative time frames etc Does the proposed action include alternative time frames, locations or activities?	No
		X Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	State assessment Is the action subject to a state or territory environmental impact assessment?	No
		X Yes, you must also complete Section 2.5
1.12	Component of larger action Is the proposed action a component of a larger action?	X No
		Yes, you must also complete Section 2.7
1.13	Related actions/proposals Is the proposed action related to other actions or proposals in the region (if known)?	X No
		Yes, provide details:
1.14	Australian Government funding Has the person proposing to take the action received any Australian Government grant funding to undertake this project?	X No
		Yes, provide details:
1.15	Great Barrier Reef Marine Park Is the proposed action inside the Great Barrier Reef Marine Park?	X No
		Yes, you must also complete Section 3.1 (h), 3.2 (e)

2 Detailed description of proposed action

NOTE: It is important that the description is complete and includes all components and activities associated with the action. If certain related components are not intended to be included within the scope of the referral, this should be clearly explained in section 2.7.

2.1 Description of proposed action

This should be a detailed description outlining all activities and aspects of the proposed action and should reference figures and/or attachments, as appropriate.

The proposed action involves the rural residential sub-division of 84 lots (average size of 4886 m² with a maximum building footprint including driveways of 2000 m²) from a single, 45.71 ha parcel of land on Lot 72 on RP903071. The maximum possible area for building envelopes is 16.80 Ha. All proposed Building Envelopes must be approved by the Developer. For any that about the Jumrum Creek buffer, on approval, the developer will clearly identify the Buffer Area/Building Envelope boundary.

The development will also include construction of internal roads and services, drainage structures and waterway crossings. The development has preliminary approval and will be assessed under the provisions of the Mareeba Shire Planning Scheme 2004. Conditions in the preliminary approval require building envelopes to be identified and preserved, as well as for 4.6 ha of existing remnant vegetation to be preserved.

Three stages of development are proposed, with 11 lots in Stage 1, 31 lots in stage 2 and 42 lots in stage 3. Stages 2 and 3 will require separate creek crossings over Jumrum Creek.

Much of the land supports regrowth vegetation, with a small portion of remnant vegetation located in the south eastern corner (see Attachment 1 (Figure 2)). This remnant vegetation is subject to a Property Map of Assessable Vegetation (PMAV) that has been agreed with the Queensland Department of Environment and Resource Management (DERM) (See Attachment 3). This portion of land will be encompassed in a single, larger lot to satisfy DERM's vegetation code requirements.

The development has the support of a local group, "Envirocare", who have opened a rainforest plant nursery and have offered to assist in revegetation of the development site and declared weed management.

The development activities will include:

- clearing and grubbing for road reserves (only internal roads and drainage structures will be cleared for the development, with building envelopes to be cleared by lot owners).
 - Stage 1 – 7 239 m² (see Figures 4 and 5)
 - Stage 2 – 17 712 m²
 - Stage 3 – 22 258 m²
- preservation of waterway buffers of riparian vegetation by retaining a 10 m buffer from the low bank or 5 m from the high bank (whichever is the greater) on both sides of Jumrum Creek giving an approximate total area of 8.10Ha.
- no fill will be imported
- slopes will be 1V : 1.5H maximum slope in environmentally sensitive areas (such as creeks) in accordance with local council guidelines
- construction of embankments
- construction of drainage structures (pipes, box culverts and steel arches for major waterway crossings)
- construction of pavement and surfacing for internal roads (areas for pavement)
 - Stage 1 2 500 m²
 - Stage 2 7 765 m²
 - Stage 3 9 295 m²

- widening of sections of Fallon Road to an overall width of 7 m
- installation of service infrastructure
- installation of bird/bat nesting boxes
- landscape works including restoration of sections of riparian vegetation with native species.

2.2 Alternatives to taking the proposed action

This should be a detailed description outlining any feasible alternatives to taking the proposed action (including not taking the action) that were considered but are not proposed (note, this is distinct from any *proposed* alternatives relating to location, time frames, or activities – see section 2.3).

The 'do-nothing' option was considered in the context of the project. Previous site uses have been logging, dairy and orchards. None of these activities are considered to offer substantial ecological advantages to the proposed development plan.

2.3 Alternative locations, time frames or activities that form part of the referred action

If you have identified that the proposed action includes alternative time frames, locations or activities (in section 1.10) you must complete this section. Describe any alternatives related to the physical location of the action, time frames within which the action is to be taken and alternative methods or activities for undertaking the action. For each alternative location, time frame or activity identified, you must also complete (where relevant) the details in sections 1.2-1.9, 2.4-2.7, 3.3 and 4. Please note, if the action that you propose to take is determined to be a controlled action, any alternative locations, time frames or activities that are identified here may be subject to environmental assessment and a decision on whether to approve the alternative.

Alternatives considered include:

- **Development Sequencing** – A three-stage approach was selected for the project, with stage 1 anticipated to have the least environmental impact.
- **Creek Crossing Options** – Structures for the two crossings of Jumrum Creek, planned for stages 2 and 3 of the development, were assessed for impacts on fauna connectivity and, in particular, the works associated with construction and operation of the traditional base slabs, wing walls and aprons on box and pipe culverts. Arch Bridges (9.2 m wide and 2.5 m high) were selected for the following ecological advantages:
 - lower impact on beds and banks
 - natural substrate
 - foundations on the creek high banks
 - these structures are greater than 3m high from the creek bed allowing passage of both small (frog) and large (cassowary) fauna species
 - low impact on fish passage during both construction and operational phases
 - low impact on hydraulics or natural ripple/riff sequences
 - access to the other side of the creek for high bank foundation works can be accommodated with a 'reno-mattress' and this can be removed after works are completed.
- No alternative locations are available.
- Kuranda is a high rainfall environment. Alternative time frames will be considered to ensure major earthworks do not coincide with the wet season.

2.4 Context, planning framework and state/local government requirements

Explain the context in which the action is proposed, including any relevant planning framework at the state and/or local government level (e.g. within scope of a management plan, planning initiative or policy framework). Describe any Commonwealth or state legislation or policies under which approvals are required or will be considered against.

Relevant state and local government legislation to this development includes:

- The development is assessable under the Queensland:
 - *Sustainable Planning Act 2009*
 - *Environmental Protection Act 1994*
 - *Vegetation Management Act 1999*

- *Water Act 2000*
- *Nature Conservation Act 1992*
- *Fisheries Act 1994*
- Mareeba Shire Planning Scheme 2004

The development will be assessed under the provisions of the Mareeba Shire Planning Scheme 2004. The current regulatory status of the development is as follows:

- A previous Development Permit for a Material Change of Use from Rural to Rural Residential is current.
 - On 1 April 2009, a Preliminary Approval for Reconfiguration of a lot, one into 84 Lots in accordance with the existing Development Permit for a Material Change of Use from Rural to Rural Residential (see Attachment 2). The Preliminary Approval was issued under a Negotiated Decision Notice Approval, under the *Integrated Planning Act 1997* (now the *Sustainable Planning Act 2009*). Typically, prior to the issue of a Development Permit, conditions within the Preliminary Approval will require the future approval of a number of management plans and reports as detailed below:
 - Water Reticulation Analysis Report with staged water demand analysis
 - Stormwater Management Plan (SMP) (staged)
 - Stormwater Infrastructure in accordance with the SMP
 - Site and Soil Evaluation Report is currently being prepared
 - Statutory covenant for a buffer on both sides of Jumrum Creek
- Other relevant conditions in the approval require:
- a maximum building footprint, including driveways, of 2000 m² (average lot size is 4886 m²).
 - Vegetation Clearing approval under the *Vegetation Management Act 1999* is included in the approval.
- Application for the operational works (Development Permit) for Stage 1 works was submitted to the Tablelands Regional Council on 20 December 2010, and was approved on 8 March 2011. This stage is expected to be low-impact, requiring minor clearing and a small waterway crossing.
 - A Riverine Protection Permit, under the *Water Act 2000*, for the unnamed creek in Stage 1, has already been approved for these proposed works.
 - Application for development permit to reconfigure a lot will be submitted to Tablelands Regional Council in the near future.
 - Application for the operational works (Development Permit) for Stages 2 and 3 works will be submitted to the Tablelands Regional Council, on completion of the Stage 1 development. It is anticipated that development of Stage 3 will be take approximately four years.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

If you have identified that the proposed action will be or has been subject to a state or territory environmental impact statement (in section 1.11) you must complete this section. Describe any environmental assessment of the relevant impacts of the project that has been, is being, or will be carried out under state or territory legislation. Specify the type and nature of the assessment, the relevant legislation and the current status of any assessments or approvals. Where possible, provide contact details for the state/territory assessment contact officer.

Describe or summarise any public consultation undertaken, or to be undertaken, during the assessment. Attach copies of relevant assessment documentation and outcomes of public consultations (if available).

No formal environmental assessment is required under Queensland legislation, only supporting information for planning and operational approvals.

2.6 Public consultation (including with Indigenous stakeholders)

Your referral must include a description of any public consultation that has been, or is being, undertaken. Where Indigenous stakeholders are likely to be affected by your proposed action, your referral should describe any consultations undertaken with Indigenous stakeholders. Identify the relevant stakeholders and the status of consultations at the time of the referral. Where appropriate include copies of documents recording the outcomes of any consultations.

No formal public or Indigenous consultation has been undertaken, except public notification during the development application period required under the *Integrated Planning Act 1997*.

For a previous approval for a Material Change of Use from Rural to Rural Residential, in accordance with the *Integrated Planning Act 1997* (IPA), public consultation was undertaken prior to Council granting the Development Permit. The public notification process involved placing a notice of development in a locally circulated news paper, a notice of development on each street frontage of the site and posting a notice of development to each adjoining landowner. The public had a period of 15 days to lodge any properly made submissions with Council. Submissions raised were primarily about traffic matters. Council addressed these concerns by including extensive road upgrade conditions as part of the approval. Subsequently no appeals were lodged by any submitters.

2.7 A staged development or component of a larger project

If you have identified that the proposed action is a component of a larger action (in section 1.12) you must complete this section. Provide information about the larger action and details of any interdependency between the stages/components and the larger action. You may also provide justification as to why you believe it is reasonable for the referred action to be considered separately from the larger proposal (eg. the referred action is 'stand-alone' and viable in its own right, there are separate responsibilities for component actions or approvals have been split in a similar way at the state or local government levels).

This referral is for all three stages of works for this current development. Staging of works is being undertaken for ecological and financial considerations.

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest.

Your assessment of likely impacts should refer to the following resources (available from the Department's web site):

- specific values of individual World Heritage properties and National Heritage places and the ecological character of Ramsar wetlands;
- profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;
- *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*; and
- associated sectoral and species policy statements available on the web site, as relevant.

Note that even if your proposal will not be taken in a World Heritage area, Ramsar wetland, Commonwealth marine area, the Great Barrier Reef Marine Park or on Commonwealth land, it could still impact upon these areas (for example, through downstream impacts). Consideration of likely impacts should include both direct and indirect impacts.

3.1 (a) World Heritage Properties

Description

Wet Tropics of Queensland

The eastern boundary of the proposed development lies approximately 2 km from the western boundary of the Wet Tropics World Heritage Area (WTWHA) (information from the WTWHA with Cairns/Kuranda inset provided on the Wet tropic Management Authority website).

The proposed development is downslope (approximately 50 m difference in elevation) of the WTWHA boundary so no potential significant impacts, including water quality are anticipated (see Figure 3).

Nature and extent of likely impact

Address any impacts on the World Heritage values of any World Heritage property.

N/A

3.1 (b) National Heritage Places

Natural

Wet Tropics of Queensland

See 3.1(a)

Indigenous

Wet Tropics World Heritage Area (Indigenous Values)

See 3.1(a)

Nature and extent of likely impact

Address any impacts on the National Heritage values of any National Heritage place.

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

N/A

Nature and extent of likely impact

Address any impacts on the ecological character of any Ramsar wetlands.

N/A

3.1 (d) Listed threatened species and ecological communities

Twenty-four threatened species were listed on the Protected Matters search within a 2 km buffer of the development site. These include three birds, one fish, five frogs, six mammals, eight plants and one reptile.

A 5 km search of the Wildlife Online database on the DERM's website identified records for ten threatened species occurring on or near the site. These included:

- Kuranda Tree Frog (*Litoria myola*) – Endangered – 15 records
- Common Mistfrog (*Litoria rheocola*) - Endangered – 6 records
- Waterfall Frog, Torrent Tree Frog (*Litoria nannotis*) - Endangered – 4 records (none since 1990)
- Australian Lacelid (*Nyctimystes dayi*) – Endangered – 6 records
- Red Goshawk (*Erythrotriochis radiatus*) – Vulnerable – 4 records
- Southern Cassowary (*Casuarius casuarius johnsonii*) – Endangered – 17 records
- Buff-breasted Button-quail (*Turnix olivii*) – Endangered – 1 record
- *Diplazium pallidum* - Endangered – 1 record
- *Sauropus macranthus* – Vulnerable – 1 record
- *Archontophoenix myolensis* - Endangered – 2 records

Further searches of the Wildlife Online database with reduced buffers revealed the following:

- 2 km buffer - eight threatened species records (no plant species records)
- 1 km buffer - no threatened species.

Description of Listed Species

TABLE 1: Likelihood of Protected Species occurring on the site?

Scientific Name	Common Name	Wildlife Online Records (5 km)	EPBC Status	Likelihood of Presence
<i>Casuarius casuarius johnsonii</i>	Southern Cassowary	17 records	Endangered	Unlikely but may traverse the site
<i>Erythrotriochis radiatus</i>	Red Goshawk	4 records	Vulnerable	Unlikely
<i>Rostratula australis</i>	Australian Painted Snipe		Vulnerable	Unlikely
<i>Melanotaenia eachamensis</i>	Lake Eacham Rainbowfish		Endangered	Unlikely
<i>Litoria myola</i>	Kuranda Tree Frog		Endangered	Probable in riparian forest
<i>Litoria nannotis</i>	Waterfall Frog, Torrent Tree Frog	4 records (none since 1990)	Endangered	Possible in riparian forest
<i>Litoria nyakalensis</i>	Mountain Mistfrog		Critically Endangered	Unlikely
<i>Litoria rheocola</i>	Common Mistfrog	6 records	Endangered	Probable in riparian forest
<i>Nyctimystes dayi</i>	Lace-eyed Tree	6 records	Endangered	Possible in

	Frog, Australian Lacelid			riparian forest
<i>Dasyurus hallucatus</i>	Northern Quoll		Endangered	Unlikely
<i>Dasyurus maculatus gracilis</i>	Spotted-tailed Quoll or Yarri		Endangered	Unlikely
<i>Hipposideros semoni</i>	Semon's Leaf-nosed Bat, Greater Wart-nosed Horseshoe-bat		Endangered	Unlikely
<i>Pteropus conspicillatus</i>	Spectacled Flying-fox		Vulnerable	Unlikely
<i>Saccolaimus saccolaimus nudicluniatus</i>	Greater Large-eared Horseshoe Bat		Endangered	Unlikely
<i>Saccolaimus saccolaimus nudicluniatus</i>	Bare-rumped Sheathtail Bat		Critically Endangered	Unlikely
<i>Egernia rugosa</i>	Yakka Skink		Vulnerable	
Flora				
<i>Archontophoenix myolensis</i>	The Myola Archontophoenix	2 records	Endangered	Probable
<i>Dendrobium superbiens</i>	Curly Pinks		Vulnerable	Unlikely
<i>Diplazium pallidum</i>		1 record	Endangered	Possible
<i>Hodgkinsonia frutescens</i>	Atherton Turkey Bush		Vulnerable	Unlikely
<i>Huperzia filiformis</i>	Rat's Tail Tassel-fern		Endangered	Unlikely
<i>Polyscias bellendenkerensis</i>			Vulnerable	Unlikely
<i>Sauropus macranthus</i>		1 record	Vulnerable	Possible
<i>Taeniophyllum muelleri</i>	Minute Orchid, Ribbon-root Orchid		Vulnerable	Unlikely
Not found on protected matters search				
<i>Turnix olivii</i>	Buff-breasted Button-quail	1 record	Endangered	Unlikely

Listed Communities

None

Nature and extent of likely impact

Address any impacts on the members of any listed threatened species (except a conservation dependent species) or any threatened ecological community, or their habitat.

Species considered to possibly be present on site (see Table 1) are discussed in more detail below:

- Southern Cassowary (*Casuarius casuarius johnsonii*) – Endangered
It is estimated that eight cassowaries remain in the Kuranda management area. The Southern Cassowary generally requires dense tropical rainforest (such as complex/non-complex notophyll/mesophyll vine forest) and associated habitat (such as mangrove *Melaleuca*, eucalypt woodland, swamp and swamp forest), that provides a year-round supply of fleshy fruit. Cassowaries depend on access to fresh water for drinking and bathing many times a day (SEWPAC 2010).

No evidence of Cassowaries was seen during the recent ecological survey. Due to the limited abundance of fleshy fruited rainforest trees and the poor diversity, Jumrum Estate is unlikely to permanently support cassowaries, but they may travel along the creek corridor to access neighbouring forest. Maintaining a buffered corridor along Jumrum Creek and the remnant vegetation patch in the SE corner would minimise potential impacts on this species (P. Williams 2011).

- Red Goshawk (*Erythrorchis radiatus*) – Vulnerable
The Red Goshawk nests in large trees, frequently the tallest and most massive in a tall stand, and nest trees are invariably within 1 km of permanent water (NSW DECCW, 2005dh). The vegetation types include eucalypt woodland, open forest, tall open forest, gallery rainforest, swamp sclerophyll forest, and rainforest margins. Nest trees had an average height of 31.4 m, and an average girth at breast height of 2.9 m.

Red goshawks may fly through the estate, though it is very unlikely that they nest or roost in the block. The larger Red Stringy Barks near the creek in the south-east corner could support Red Goshawks, however, the presence of the dense mid-canopy of rainforest trees makes it less suitable habitat for them. Maintaining the remnant vegetation patch in the SE corner would minimise potential impacts on this species (P. Williams 2011).

- Australian Painted Snipe (*Rostratula australis*) – vulnerable
The Australian Painted Snipe generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans (TSSC 2003n). They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains. Typical sites include those with rank emergent tussocks of grass, sedges, rushes or reeds, or samphire; often with scattered clumps of lignum *Muehlenbeckia* or canegrass or sometimes tea-tree (*Melaleuca*). The site does not support such habitat; therefore, it is considered unlikely this species would be on site.
- Kuranda Tree Frog (*Litoria myola*) – Endangered
Surveys and monitoring performed over the summer wet season of 2006–07 showed a noticeable decline in abundance of the species. In particular, numbers at the only site with a significant breeding aggregation, Jumrum Creek, declined from 500 adults to 200 in November 2008 (C.J. Hoskin 2009, pers. comm., cited in TSSC 2010g). This represents a 30 per cent reduction in total population size counts over two years.

It is probable that this species occurs on site. Maintaining a buffered corridor along Jumrum Creek and the remnant vegetation patch in the SE corner would reduce potential impacts on this species (P. Williams 2011).

- Waterfall Frog, Torrent Tree Frog (*Litoria nannotis*) – Endangered
-

The Waterfall Frog is a stream dwelling species that is endemic to the Wet Tropics Bioregion (Hodgkison & Hero 2001; Williams & Hero 1998, 2001). It is restricted to rocky stream habitats in rainforest or wet sclerophyll forest where there is fast flowing water, waterfalls and cascades. Unlike most stream-breeding frog species that live in the adjacent forest and use the stream habitat for breeding, both male and female Waterfall Frogs use the stream as primary habitat throughout the year (Hodgkison & Hero 2001, 2002).

It is quite likely this species could be present on site. Maintaining a buffered corridor along Jumrum Creek and the remnant vegetation patch in the SE corner would reduce potential impacts on this species (P. Williams 2011).

- Mountain Mistfrog (*Litoria nyakalensis*) – Critically Endangered
Adult Mountain Mistfrogs were last recorded in April 1990, and tadpoles and metamorphs were last recorded in November 1990 on the Carbine Tableland. However, this species had apparently disappeared from sites on the Atherton Tableland much earlier (Richards et al. 1993).

The absence of records for this species for the last 20 years makes it unlikely that this species would be found on site.

- Common Mistfrog (*Litoria rheocola*) – Endangered
It is reported that only two adults were observed at Bobbin Bobbin Falls on the Atherton Tableland, although the species had been found regularly in that area between 1998 and February 2000 (Retallick 2001b, pers. comm.; Richards et al. 1993). The species is restricted to fast flowing, rocky creeks and streams in rainforest, as well as wet sclerophyll forest.

The presence or absence of this species on site would require targeted investigation. Maintaining a buffered corridor along Jumrum Creek and the remnant vegetation patch in the SE corner would reduce potential impacts on this species (P. Williams 2011).

- Lace-eyed Tree Frog, Australian Lacelid (*Nyctimystes dayi*) – Endangered
The Lace-eyed Tree Frog has disappeared from upland sites throughout the Wet Tropics, and was last recorded from Mt Spec State Forest in 1990 and the Kirrama Range in 1989 (Richards et al. 1993; M. Cunningham 2001, pers. comm.). Richards et al. (1993) noted that the species was still common at most foothill and lowland sites and recorded adults and larvae from upland sites north of the Daintree River. These populations subsequently disappeared in 1992 and 1993 (M. Cunningham 2001, pers. comm.).

The absence of records for this species over the last 20 years makes it unlikely that this species would be found on site.

- Northern Quoll (*Dasyurus hallucatus*) – Endangered
Quolls are carnivorous marsupials and are susceptible to cane toad toxins, fire and introduced predators, foxes and cats. In Queensland, some populations of Northern Quolls have persisted following colonisation by Cane Toads. These areas include, but are not restricted to, upland rocky areas (Cape Cleveland/Mt Elliott, Mareeba, Crediton, Eungella, Clarke Range) and several coastal sites (Cleveland, Cape Upstart, Cape Gloucester, Condor Range) in north and central Queensland (Threatened Species Scientific Committee 2005, Ball pers. comm. 2008).

The emergent rainforest on site is considered too simplistic in both species diversity and structure to support this species (P. Williams 2011 pers. comm.).

- Spotted-tailed Quoll or Yarri (North Queensland subspecies) (*Dasyurus maculatus gracilis*) – Endangered

This species is endemic to coastal ranges between Townsville and Cairns, generally 600 m or more above sea level. It requires denser older forests as habitat. The long-term presence of dogs and cats would also make the presence of a top predator doubtful in this area (P.Williams 2011 *pers. comm.*).

- Semon's Leaf-nosed Bat, Greater Wart-nosed Horseshoe-bat (*Hipposideros semoni*) Endangered

Possibly transient through the site. The regrowth forest may provide limited food sources or roosting sites for this species (P.Williams 2011 *pers. comm.*).

- Spectacled Flying-fox (*Pteropus conspicillatus*) – Vulnerable

The Spectacled flying foxes may fly through the site, but it is unlikely that they nest or roost in the block. The absence of large fleshy fruited trees would deter their residence (P. Williams 2011).

- Greater Large-eared Horseshoe Bat (*Rhinolophus philippinensis*) (large form) – Endangered

Possibly a transient species through the site. The regrowth forest may provide limited food sources or roosting sites for this species (P.Williams 2011 *pers. comm.*).

- Bare-rumped Sheath-tail Bat (*Saccolaimus saccolaimus nudicluniatus*) – Critically Endangered

Possibly transient, but the regrowth forest provides limited food sources or roosting sites for this species (P.Williams 2011 *pers. comm.*).

- Yakka Skink (*Egernia rugosa*) – Vulnerable

This species has patchy distributions throughout Queensland with isolated populations through sub-humid to semi-arid areas. The majority of populations occur within the Brigalow Belt region (DERM 2010). It is usually associated with dry eucalypt forest and brigalow vegetation, so it would be unlikely to be supported near Kuranda (P.Williams 2011 *pers. comm.*).

- **PLANTS**

- Myola Palm (*Archontophoenix myolensis*) – Endangered

This species may be present in the north-eastern corner of the estate, along Jumrum Creek and tributaries (P. Williams 2011). Protecting the riparian vegetation along Jumrum Creek may reduce potential impacts on this species (P. Williams 2011 *pers. comm.*).

- Curly Pinks (*Dendrobium superbiens*) – Vulnerable

This species is known from the Mcallister Range, which is between Kuranda and Port Douglas (also on Cape York). This epiphytic orchid is, typically, found on old large trees of unlogged forest, and would be unlikely to be present on the young regrowth on site (P.Williams 2011 *pers. comm.*).

- *Diplazium pallidum* – Endangered

This fern is known from the Kuranda range near Smithfield. Active searches on site were unsuccessful in locating specimens (P.Williams 2011 *pers. comm.*).

- Atherton Turkey Bush (*Hodgkinsonia frutescens*) – Vulnerable

This species is known from Cape York to Innisfail, and has been collected at Tolga and Yungaburra, but not from near Kuranda. It is possible that it grows there, but no sign of it was evident during the survey (P.Williams 2011 *pers. comm.*).

- Rat's Tail Tassel-fern (*Huperzia filiformis*) – Endangered

Known to occur near Cairns. These epiphytic ferns stand out a bit and, as per *Dendrobium superbiens*, require old trees, not the young trees present at Jumrum (P.Williams 2011 *pers. comm.*).

- *Polyscias bellendenkerensis* – Vulnerable

Known from Mossman, Bellenden Kerr and Bartle Frere. This species has never been seen near Kuranda and is considered unlikely to occur on the site. Other *Polyscias* species are common at Jumrum (for example, *P. australianum* and *P. elegans*) and these probably occupy the *Polyscias* niche (P.Williams 2011 *pers. comm.*).

- *Sauropus macranthus* – Vulnerable

This species is not known to naturally occur near Kuranda, and, therefore, is considered unlikely to occur on the site (P.Williams 2011 *pers. comm.*).

- Minute Orchid, Ribbon-root Orchid (*Taeniophyllum muelleri*) – Vulnerable

This small orchid has no leaves . It grows in rainforests around Brisbane, particularly along creeks (Australian Native Orchid Society 2011). Although considered unlikely to be present on the site, protecting the riparian vegetation along Jumrum Creek would reduce potential impacts on this species.

3.1 (e) Listed migratory species

Seventeen migratory species were listed on the 'protected matters' search with a 2 km buffer, together with 16 listed marine species.

Description

The Protected Matters search revealed three migratory marine birds, eight migratory terrestrial species, and five migratory wetland species.

Nature and extent of likely impact

Address any impacts on the members of any listed migratory species, or their habitat.

These species are unlikely to be significantly affected by the proposed works.

3.1 (f) Commonwealth marine area

(If the action is in the Commonwealth marine area, complete 3.2(c) instead. This section is for actions taken outside the Commonwealth marine area that may have impacts on that area.)

No Commonwealth Marine Areas were listed on the 'protected matters' search with a 2 km buffer.

3.1 (g) Commonwealth land

(If the action is on Commonwealth land, complete 3.2(d) instead. This section is for actions taken outside Commonwealth land that may have impacts on that land.)

Description

If the action will affect Commonwealth land also describe the more general environment. The Policy Statement titled *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* provides further details on the type of information needed. If applicable, identify any potential impacts from actions taken outside the Australian jurisdiction on the environment in a Commonwealth Heritage Place overseas.

See section 3.1(a)

Nature and extent of likely impact

Address any impacts on any part of the environment in the Commonwealth land. Your assessment of impacts should refer to the *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* and specifically address impacts on:

- ecosystems and their constituent parts, including people and communities;
- natural and physical resources;
- the qualities and characteristics of locations, places and areas;
- the heritage values of places; and
- the social, economic and cultural aspects of the above things.

N/A

3.1 (h) The Great Barrier Reef Marine Park

N/A

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

You must describe the nature and extent of likely impacts (both direct & indirect) on the whole environment if your project:

- is a nuclear action;
- will be taken by the Commonwealth or a Commonwealth agency;
- will be taken in a Commonwealth marine area;
- will be taken on Commonwealth land; or
- will be taken in the Great Barrier Reef marine Park.

Your assessment of impacts should refer to the *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* and specifically address impacts on:

- ecosystems and their constituent parts, including people and communities;
- natural and physical resources;
- the qualities and characteristics of locations, places and areas;
- the heritage values of places; and
- the social, economic and cultural aspects of the above things.

3.2 (a)	Is the proposed action a nuclear action?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment

3.2 (b)	Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment

3.2 (c)	Is the proposed action to be taken in a Commonwealth marine area?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1 (h))

3.2 (d)	Is the proposed action to be taken on Commonwealth land?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1 (i))

3.2 (e)	Is the proposed action to be taken in the Great Barrier Reef Marine Park?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1 (j))

3.3 Other important features of the environment

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed above). If at Section 2.3 you identified any alternative locations, time frames or activities for your proposed action, you must complete each of the details below (where relevant) for each alternative identified.

3.3 (a) Flora and fauna

Site Ecological Study Description

A recent ecological study done on the site by Paul Williams (see Attachment 1) described the site as having three broad vegetation types: regrowth; remnant; and riparian (see Attachment 1 (Figure 2)). The general description of the site was as follows:

“The majority of the approximately 45 ha estate is covered by forest that has regrown following past clearing (Figures 2 and 3). The regrowth forest has attained a typical height of 12 to 18 m. The canopy cover varies between locations but can be up to 70% foliage cover. The regrowth forest throughout the estate is dominated by four common trees: *Acacia celsa* (Wattle or Brown salwood), which are typically the tallest trees, *Alphitonia petrei* (Sarsparilla), *Polyscias australianum* (Celerywood or Ivory basswood) and *Alstonia muelleriana* (Hairy milky pine). These trees are common Wet Tropics regrowth “pioneers” species, reflecting the past disturbance”.

“The remnant forest covers approximately 4.6 hectares (about 10% of the estate). The remnant forest is officially described by DERM as RE 7.11.1a: Simple-complex mesophyll to notophyll vine forest (i.e. a rainforest dominated by medium to large leaved trees, with simple to complex species diversity). However, the site actually contains an old forest of 25 to 30 metre tall *Eucalyptus pellita* (Red-stringybark or large fruited red mahogany) that emerge above a 10 – 18 metre tall rainforest canopy. The rainforest element consists of small, young trees which appear to have invaded the eucalypt forest, perhaps half a century ago”.

“The riparian forest has a fairly similar tree composition to the rest of the property, with trees that are common in the surrounding forest, such as *Acacia celsa*, *Alphitonia petrei*, *Alstonia muelleriana*, *Litsea leafeana*, *Melastoma malabathricum*, *Neolitsea dealbata* and *Polyscias australianum*. The riparian forest is different in having a greater abundance of tree ferns (*Cyathea* sp.), *Freycinetia* sp. (Climbing pandanus), *Pandanus* sp. (Pandanus trees), Figs (*Ficus* sp.) and Palms. Several of these riparian forest species will provide abundant moderate sized fleshy fruit (e.g. figs, pandanus and palms), so that the combination of water and fleshy fruits makes the riparian forest the most valuable fauna habitat” (P.Williams 2011).

Regional Ecosystem Description (see Figure 2)

The vegetation community in the area is described as Regional Ecosystem (RE) 7.11.1 on the Regional Ecosystem and Remnant Map —version 6 database on the DERM website (DERM 2011). The majority of the site is described as non-remnant, apart from a small portion in the south-east corner. This same small land portion is also marked as ‘essential habitat’ for the Southern Cassowary.

RE 7.11.1 is described as sRE 7.11.1 is very species rich. Threatened species of 7.11.1a include *Archidendron kanisii*, *Archidendropsis xanthoxylon*, *Argyrodendron* sp. (Whyanbeel), *Asplenium wildii*, *Austromuellera trinervia*, *Beilschmiedia castrisinensis*, *Cleistanthus discolor*, *Cleistanthus myrianthus*, *Cyclophyllum costatum*, *Dioclea hexandra*, *Endiandra grayi*, *Endiandra microneura*, *Euodia hylandii*, *Euodia pubifolia*, *Euonymus globularis*, *Freycinetia marginata*, *Gardenia actinocarpa*, *Garnotia stricta* var. *longiseta*, *Haplostichanthus* sp. (Coopers creek), *Huperzia* spp., *Ichnanthus pallens* var. *majus*, *Ilex* sp. (Gadgarra), *Jagera javanica* var. *australiana*, *Lepiderema hirsuta*, *Marsdenia hemiptera*, *Megahertzia amplexicaulis*, *Microsorium membranifolium*, *Mitrantia bilocularis*, *Neostrearia fleckeri*, *Noahdendron nicholasii*, *Peripentadenia phelpsii*, *Polyalthia* sp. (Wyvuri), *Pseuduvaria froggattii*, *Quassia baileyana*, *Randia audasii*, *Rhodomyrtus effusa*, *Rourea brachyandra*, *Ryparosa javanica*, *Sankowskyia stipularis*, *Sarcotoechia villosa*, *Symplocos crassiramifera*, *Vrydagzynea paludosa*, *Whyanbeelia terrae-reginae* and *Xanthophyllum fragrans*.

The area includes many locally restricted regional endemics and unusual species. such as: *Callerya* sp. (Barratt creek), *Caelospermum dasylobum*, *Cupaniopsis diploglottoides*, *Mischarytera* sp. (Oliver Creek), *Storckiella australiensis*, *Tainia trinervis* and *Idiospermum australiense* (Queensland Herbarium 2009).

3.3 (b) Hydrology, including water flows

Jumrum Creek is the major waterway in the area and is a permanent waterway. There are three other small ephemeral waterways on site that run intermittently.

3.3 (c) Soil and Vegetation characteristics

The geology in the area is described as Hodgekinson Formation mudstone of the Devonian era, with argillaceous detrital sediment. The lithological description is mainly dark grey, thin bedded, mudstone, subordinate thin to thick bedded arenite beds with minor chert and basalt.

The soils are described as The dominant soils throughout the estate are of metamorphic origin and are a heavy, pale-coloured clay.

Three broad vegetation types were documented: regrowth, remnant and riparian forest along major creek banks.

3.3 (d) Outstanding natural features

None Identified.

3.3 (e) Remnant native vegetation

There is a small portion of land in the south-east corner of the site identified as 'remnant vegetation' on the DERM RE mapping (see Figure 2). This area is also identified as 'essential habitat' for the Southern Cassowary, however, a site specific survey found no evidence of cassowaries on site (P. Williams 2011).

However, the site actually contains an old forest of 25 to 30 m tall *Eucalyptus pellita* (Red-Stringybark or Large-fruited Red Mahogany) that emerge above a 10 to 18 m tall rainforest canopy. The rainforest element consists of small, young trees, which appear to have invaded the eucalypt forest, perhaps half a century ago (P. Williams 2011).

The area of this portion is 4.6 ha and will be retained as negotiated in the approval under the *Vegetation Management Act 1999*.

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

Varying gradients exist across the site, up to 8%, with some steeper portions near drainage and creek lines. The gradient generally slopes downwards from the west to the east until Jumrum Creek and then slopes upwards to the east of the site.

3.3 (g) Current state of the environment

Include information about the extent of erosion, whether the area is infested with weeds or feral animals and whether the area is covered by native vegetation or crops.

Several exotic species and significant weeds are present in the regrowth forest, typically on the margins of regrowth, along tracks and in grassy clearings. The species were primarily *Cyperus aromaticus* (Navua sedge), *Lantana camara* (Lantana), *Megathyrsus maximus* (Guinea and Hamil grass), *Pinus caribaea* (Caribaea pine), *Rubus alceifolius* (Giant bramble) and *Sphagneticola trilobata* (Singapore daisy) (P. Williams 2011).

The site has little evidence of erosion and maintains up to 70% cover across much of the site.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

See section 3.1 (b)

3.3 (i) Indigenous heritage values

Preliminary, informal discussions with local Indigenous groups have not identified any known Indigenous Heritage values.

3.3 (j) Other important or unique values of the environment

Describe any other key features of the environment affected by, or in proximity to the proposed action (for example, any national parks, conservation reserves, wetlands of national significance etc).

None identified.

3.3 (k) Tenure of the action area (eg freehold, leasehold)

Freehold

3.3 (l) Existing land/marine uses of area

N/A

3.3 (m) Any proposed land/marine uses of area

N/A

4 Measures to avoid or reduce impacts

Note: If you have identified alternatives in relation to location, time frames or activities for the proposed action at Section 2.3 you will need to complete this section in relation to each of the alternatives identified.

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

For any measures intended to avoid or mitigate significant impacts on matters protected under the EPBC Act, specify:

- what the measure is,
- how the measure is expected to be effective, and
- the time frame or workplan for the measure.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

Provide information about the level of commitment by the person proposing to take the action to implement the proposed mitigation measures. For example, if the measures are preliminary suggestions only that have not been fully researched, or are dependent on a third party's agreement (e.g. council or landowner), you should state that, that is the case.

Note, the Australian Government Environment Minister may decide that a proposed action is not likely to have significant impacts on a protected matter, as long as the action is taken in a particular manner (section 77A of the EPBC Act). The particular manner of taking the action may avoid or reduce certain impacts, in such a way that those impacts will not be 'significant'. More detail is provided on the Department's web site.

For the Minister to make such a decision (under section 77A), the proposed measures to avoid or reduce impacts must:

- clearly form part of the referred action (eg be identified in the referral and fall within the responsibility of the person proposing to take the action),
- be must be clear, unambiguous, and provide certainty in relation to reducing or avoiding impacts on the matters protected, and
- must be realistic and practical in terms of reporting, auditing and enforcement.

More general commitments (eg preparation of management plans or monitoring) and measures aimed at providing environmental offsets, compensation or off-site benefits CANNOT be taken into account in making the initial decision about whether the proposal is likely to have a significant impact on a matter protected under the EPBC Act. (But those commitments may be relevant at the later assessment and approval stages, including the appropriate level of assessment, if your proposal proceeds to these stages).

Most of the proposed mitigation initiatives have already been given effect in existing approvals and the design of the project as referred (i.e. are "hard wired") while some are to be implemented during and after the hard engineering works are completed. The major approval requirements and initiatives are outlined below:

- 1) Retaining the complete mapped portion of remnant vegetation in an individual lot and placing covenants on the title deed.
- 2) Retaining a 10 m buffer from the low bank or 5 m from the high bank (whichever is greater) on both sides of Jumrum Creek. This creek traverses the site.
- 3) Utilising metal arches for crossing permanent waterways.
- 4) Placing maximum building envelopes of approximately 40% of each lot size.
- 5) Assistance in native revegetation by of a local group "Envirocare", who have offered to assist in revegetation of the development site.
- 6) Installing bird/bat nesting boxes in riparian areas along Jumrum Creek.
- 7) Preparing management plans to mitigate construction impacts.

1) Retain 4.6 Ha of Remnant Vegetation

Outline of Measure

Agreement has been reached between the developer and DERM, and conditioned through an approval under the *Vegetation Management Act 1999*, to retain the 4.6 Ha portion of remnant vegetation in the south-east corner of the site. This portion has been transferred into a separate lot and a covenant will be placed over the title of the lot to assist ongoing future protection. This is the same portion of land listed as essential habitat for the Southern Cassowary.

Likely Effectiveness

The action is guaranteed, as it is a condition of the existing Preliminary Development Approval (see Attachment 2).

Timeframe

Tenure conversion is already complete. The covenant title conditions will be completed during sales of Stages 2 and 3.

2) Retain 10 m vegetation buffer either side of Jumrum Creek

Outline of Measure

A 10 m vegetation buffer from the low bank or 5 m from the high bank (whichever is the greater) will be retained on both sides of Jumrum Creek. These buffers will be clearly delineated prior to construction so they are protected from development impacts. All proposed Building Envelopes must be approved by the Developer. For any sites that abut the buffer, the developer will clearly identify the Buffer Area/Building Envelope boundary.

The high bank is several metres above the low bank in most areas. The approximate area of Jumrum Creek contained within 5 m of the high bank is 8.10 Ha.

The maximum area of the site to be developed is 21.52 Ha or about 47% of the total site area. The undeveloped area of the site remaining is 24.19 Ha.

Likely Effectiveness

The action is guaranteed, as it is a condition of the existing Preliminary Development Approval (see Attachment 2).

The majority of potentially affected protected fauna species on site are frogs that live close to or breed near permanent waterways. This will effectively provide a fauna corridor of a minimum of between 10 and 30 m and should minimise many impacts on these species.

It is understood from the ecological survey that, while no evidence of Cassowaries was found on site, they may potentially use the site as a thoroughfare to access World Heritage Areas to the east and remnant rainforest to the west and south. This fauna corridor should provide sufficient passage through the development should cassowaries return to this area.

Timeframe

Immediate (included in project).

The buffer will be identified on detailed design drawings and the area will be clearly delineated prior to construction.

3) Metal Arches for Two Creek Crossings on Jumrum Creek

Outline of Measure

The creek crossings of Jumrum Creek have been modified from large pipes to metal arches constructed to have a minimum impact on the creek bed and banks. The arches are in the order of 9.2 m wide and 2.5 m high. The abutments will be constructed on the high banks of Jumrum Creek to allow the additional height of the waterway (approximately 3 m).

It should be noted that to construct the first crossing, it will be necessary create a temporary crossing on the bed of the creek to allow access of construction equipment for abutment works. It is also likely that some construction will occur in the creek and there will be a short-term impact on the bed on the creek.

Stage 1 will also include installation of an oversize drainage pipe to facilitate fish and frog passage.

Likely Effectiveness

The action is guaranteed.

The action will minimise interference with the beds and banks of Jumrum Creek and allow a natural substrate for fauna and fish passage. Construction on the high bank will also minimise impacts on creek banks and enhance the height for fauna passage. The arches also have the added benefit that they are fish friendly and the height will allow in substantial sunlight for natural vegetation. Following construction, the direct impacts on species such as frogs should be low. Edge effects may continue for longer periods.

The temporary crossing for equipment is only expected to have short-term impacts and as much material as possible and drainage structures will be removed on completion of works.

Timeframe

During construction of Stage 2 works. Preliminary costings for the metal archways have already been received.

4) Maximum Building Envelopes (including driveways) of 2,000 m² on Average Block sizes of 4,886 m².

Outline of Measure

The average block size planned for this development is 4886 m². The maximum building envelope is 2000 m² and maximum total area for buildings is 16.8 Ha. This allows space on each block to retain a proportion of native vegetation and allows areas for in-fill planting. All proposed building envelopes must be approved by the developer.

Likely Effectiveness

The action is guaranteed, as it is a condition of the existing Preliminary Development Approval (see Attachment 2).

The action will allow additional habitat for native animals. Although fencing may impede land dwelling fauna, the additional habitat will be available to arboreal, bird and bat species.

Timeframe

Lot clearing will be conducted by new lot owners after sales.

5) Assistance in native revegetation by of a local group "Envirocare".

Outline of Measure

The development has donated \$1,000 for 'frog friendly' weed management and has the support of a local group "Envirocare" who have opened a rainforest plant nursery and have offered to assist in revegetation of the development site. The developer will pay 50% of the purchase cost of rainforest flora purchased from Envirocare by lot owners.

Likely Effectiveness

The action will assist in providing local endemic species specific to site fauna needs in revegetation with a focus on riparian vegetation.

Timeframe

Post-construction for each stage of works.

6) Installation of Bird/Bat Nesting boxes along Jumrum Creek

Outline of Measure

In addition to the creek crossing structures, 5 bird/bat nesting boxes will be installed in appropriate habitat trees along Jumrum Creek.

Likely Effectiveness

This initiative is likely to be effective in achieving its objective. Evidence from other projects demonstrate they have been successful for bird and glider species. This will assist in mitigating any nesting habitat lost during construction activities.

Timeframe

It will probably take some years after construction before the nesting boxes are utilised.

7) Preparation of Environmental Plans and FNQROC Development Manual

Outline of Measure

- a) Prior to the issue of a Development Permit, conditions within the preliminary approval require the future approval of a number of management plans and reports as detailed below:
- Water Reticulation Analysis Report with staged water demand analysis as part of the infrastructure agreement
 - Stormwater Management Plan (SMP) (Staged)
 - Stormwater Infrastructure in accordance with the SMP
 - Site and Soil Evaluation Report
 - Statutory covenant for a buffer on both sides of Jumrum Creek
 - Fauna Management Plan (with a focus on frogs, fish and cassowaries)
- b) In addition to the above approval requirements:
- Site clearance will be limited to the roads and immediate surroundings. House sites will be cleared later by the new lot owners.
 - Erosion and sediment controls will be in accordance with Far North Queensland Regional Organisation of Councils (FNQROC) Development Manual, best industry practice and standards.
 - The Erosion and Sediment Control Plan (ESCP) shall be based on the requirements of "Soil Erosion and Sediment Control: Engineering Guidelines for Queensland Construction Sites" (IE Aust 1996).
 - The project does not permit any through traffic and speed is limited by environmental design. The speed limit will be relatively low at less than 50 kmh.

- Construction generally will be in accordance with FNQROC Development Manual, best industry practice and standards.
- Limitations on keeping of pets and fencing will form part of the building covenant. Owners of domestic animals will be required to fence their building envelope.

Likely Effectiveness

- a) The actions are guaranteed, as they are Approval conditions.
- b) These actions are intended and offered in good faith.

These plans will minimise impacts on waterways, the loss of topsoil, noise, dust and the extent of vegetation clearing. The site and soil evaluation will also allow sustainable sewage infrastructure to minimise impacts on groundwater.

Timeframe

- a) These are conditions of the preliminary Development Approval and must be prepared prior to issue of the final Development Approval.
- b) Prior to and during construction.

5 Conclusion on the likelihood of significant impacts

Identify whether or not you believe the action is a controlled action (ie. whether you think that significant impacts on the matters protected under Part 3 of the EPBC Act are likely) and the reasons why.

5.1 Do you THINK your proposed action is a controlled action?

- | | |
|-------------------------------------|---------------------------|
| <input checked="" type="checkbox"/> | No, complete section 5.2 |
| <input type="checkbox"/> | Yes, complete section 5.3 |

5.2 Proposed action IS NOT a controlled action.

Specify the key reasons why you think the proposed action is NOT LIKELY to have significant impacts on a matter protected under the EPBC Act.

Whilst the project area contains some significant environmental values, these values are in the developer's interest to protect and the significance of the likely impacts on NES Matters are considered low. This is because:

- 1) A site specific ecological study has been completed to provide a higher degree of certainty regarding the presence, status and values of the environmental context and in particular the matters of national environmental significance.
- 2) Existing and future state approvals contain conditions to protect site environmental values and mitigate construction impacts.
- 3) The only listed species quite likely to be found on site are waterway dwelling frogs and both waterway riparian buffers and creek crossing construction techniques have been developed to reduce potential long term impacts.
- 4) Suitable mitigation strategies relative to the scale, impact and value of the development have been provided in Section 4.
- 5) The financial viability of the project is based on maintaining the site environmental values and it would not be in the developer's best interest to impact on the site more than is necessary to install essential infrastructure.

It is submitted that, should the Minister decide that the action is such that it could be considered to be a controlled action under the Act under other circumstances, given the level of state approvals, environmental design and management inherent in its conception, that it can proceed without incurring significant adverse impacts if it is undertaken in the 'manner specified' in this referral.

5.3 Proposed action IS a controlled action

Type 'x' in the box for the matter(s) protected under the EPBC Act that you think are likely to be significantly impacted. (The 'sections' identified below are the relevant sections of the EPBC Act.)

Matters likely to be impacted

- | | |
|--------------------------|--|
| <input type="checkbox"/> | World Heritage values (sections 12 and 15A) |
| <input type="checkbox"/> | National Heritage places (sections 15B and 15C) |
| <input type="checkbox"/> | Wetlands of international importance (sections 16 and 17B) |
| <input type="checkbox"/> | Listed threatened species and communities (sections 18 and 18A) |
| <input type="checkbox"/> | Listed migratory species (sections 20 and 20A) |
| <input type="checkbox"/> | Protection of the environment from nuclear actions (sections 21 and 22A) |
| <input type="checkbox"/> | Commonwealth marine environment (sections 23 and 24A) |
| <input type="checkbox"/> | Great Barrier Reef Marine Park (sections 24B and 24C) |
| <input type="checkbox"/> | Protection of the environment from actions involving Commonwealth land (sections 26 and 27A) |
| <input type="checkbox"/> | Protection of the environment from Commonwealth actions (section 28) |
| <input type="checkbox"/> | Commonwealth Heritage places overseas (sections 27B and 27C) |

Specify the key reasons why you think the proposed action is likely to have a significant adverse impact on the matters identified above.

6 Environmental record of the responsible party

NOTE: If a decision is made that a proposal needs approval under the EPBC Act, the Environment Minister will also decide the assessment approach. The EPBC Regulations provide for the environmental history of the party proposing to take the action to be taken into account when deciding the assessment approach.

	Yes	No
<p>6.1 Does the party taking the action have a satisfactory record of responsible environmental management?</p> <p>Managing Director Mr. Steve Taylor has always been environmentally conscious in his developments. The 'Gums Anchorage' at Bribie Island is an example. With an 'as of right' to build 80+ units, he built only 46. Each tree was surveyed for trunk diameter and canopy circumference. Utilising aerial photographs taken by helicopter, many months were then spent adjusting locations and building designs to preserve old trees.</p>	X	
<p>6.2 Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?</p> <p>If yes, provide details</p>		X
<p>6.3 If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?</p> <p>If yes, provide details of environmental policy and planning framework</p>		X
<p>6.4 Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?</p> <p>Provide name of proposal and EPBC reference number (if known)</p>		X

7 Information sources and attachments

(For the information provided above)

7.1 References

- List the references used in preparing the referral.
- Highlight documents that are available to the public, including web references if relevant.

Australian Native Orchid Society 2011 website @
<http://www.ourshopfront.com/kabi/html/Natives/Taeniophyllum%20muelleri.php>.

Department of Environment and Resource Management (2011). Copy of the certified Regional Ecosystem and Remnant Map —version 6 for the purpose of the Vegetation Management Act 1999. Online RE Maps, The Department of Environment and Resource Management, Brisbane. [URL: <http://www.derm.qld.gov.au/REMAP>] Accessed on [date of access].

Department of Environment and Resource Management (2011). Copy of the certified Regrowth Vegetation Map—version 2 for the purpose of the Vegetation Management Act 1999. Online RE Maps, The Department of Environment and Resource Management, Brisbane. [URL: <http://www.derm.qld.gov.au/REMAP>] Accessed on [date of access].

NSW Department of Environment, Climate Change and Water (NSW DECCW), 2005dh [Internet]. *Approved Recovery Plan for the Red Goshawk (Erythrotriorchis radiatus)* (NSW National Parks & Wildlife Service (NPWS), 2002) [State Recovery Plan].

Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) (2010) Significant impact guidelines for the endangered southern cassowary (*Casuaris casuaris johnsonii*) Wet tropics population Nationally threatened species and ecological communities EPBC Act policy statement 3.15

Hodgkison, S.C. & J.-M. Hero (2002). Seasonal behaviour of *Litoria nannotis*, *Litoria rheocola* and *Nyctimystes dayi* in Tully Gorge, north Queensland, Australia. **In:** R. Nattrass, ed. *Frogs in the Community - Proceedings of the Brisbane Conference 13-14 Feb 1999*. Qld Museum.

Hoskin C. J. (2007) Description, biology and conservation of a new species of Australian tree frog (Amphibia: Anura: Hylidae: *Litoria*) and an assessment of the remaining populations of *Litoria genimaculata* Horst, 1883: systematic and conservation implications of an unusual speciation event. *Biological Journal of the Linnean Society* **91**, 549–563.

Queensland Herbarium (2009) Regional Ecosystem Description Database (REDD). Version 6.0b Updated November 2009, (November 2009) (Department of Environment and Resource Management: Brisbane).

Richards, S.J., K.R. McDonald & R.A. Alford (1993). Declines in populations of Australia's endemic tropical rainforest frogs. *Pacific Conservation Biology*. 1:66-77.

Williams, P (2011). Vegetation Assessment of Jumrum Estate Lot Plan 72RP903071 Fallon Road, Kuranda QLD 4881. Report to Steve Taylor and Partners Pty Ltd.

Williams, S.E. & J.-M. Hero (2001). Multiple Determinants of Australian Tropical Frog Biodiversity. *Biological Conservation*. 98:1-10.

Threatened Species Scientific Committee (TSSC) (2003n). Commonwealth Listing Advice for *Rostratula australis* (*Australian Painted Snipe*)

Threatened Species Scientific Committee (TSSC) (2005). Northern Quoll (*Dasyurus hallucatus*). Advice to the Minister for the Environment and Heritage from the Threatened Species Scientific Committee.

Threatened Species Scientific Committee (TSSC) (2010g). Commonwealth Listing Advice on *Litoria myola* (Kuranda Tree Frog)

7.2 Reliability and date of information

For information in section 3 specify:

- source of the information;
 - how recent the information is;
 - how the reliability of the information was tested; and
 - any uncertainties in the information.
- The sources of the information are provided in section 7.1 with the main source being the site specific ecological assessment completed by Dr. Paul Williams.
 - The site ecological assessment was completed in February 2011.
 - Dr. Paul Williams is a respected ecologist in North Queensland.
 - Uncertainties in searches for specific frog species have been addressed by the mitigation strategies provided in Section 4.
 - Golder Associates Pty. Ltd. prepared this referral and has undertaken a brief site inspection to understand environmental context. Primary site specific and approval information in this referral has been sourced through the client and their associated consultants.

7.3 Attachments

Indicate the documents you have attached. All attachments must be less than two megabytes (2mb) so they can be published on the Department's website. Attachments larger than two megabytes (2mb) may delay the processing of your referral.

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)	✓	Figure 1 and Attachment 1 (Figure 2)
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)	✓	Figures 2 and 3
If relevant attach	copies of any state or local government approvals and consent conditions (section 2.5)	✓	Attachment 2 - Amended Decision Notice April 09 Attachment 3 - PMAV
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6)		
	copies of any flora and fauna investigations and surveys (section 3)	✓	Attachment 1 - Williams, P (2011). Vegetation Assessment of Jumrum Estate Lot Plan 72RP903071 Fallon Road, Kuranda QLD 4881. Report to Steve Taylor and Partners Pty Ltd.
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)	✓	Attachment 1 - Williams, P (2011). Vegetation Assessment of Jumrum Estate Lot Plan 72RP903071 Fallon Road, Kuranda QLD 4881. Report to Steve Taylor and Partners Pty Ltd.
	report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)		

8 Contacts, signatures and declarations

NOTE: Providing false or misleading information is an offence punishable on conviction by imprisonment and fine (s 489, EPBC Act).

Under the EPBC Act a referral can only be made by:

- the person proposing to take the action (which can include a person acting on their behalf); or
- a Commonwealth, state or territory government, or agency that is aware of a proposal by a person to take an action, and that has administrative responsibilities relating to the action¹.

Project title: Jumrum Rainforest Estate

8.1 Person proposing to take action

This is the individual, government agency or company that will be principally responsible for, or who will carry out, the proposed action.

If the proposed action will be taken under a contract or other arrangement, this is:

- the person for whose benefit the action will be taken; or
- the person who procured the contract or other arrangement and who will have principal control and responsibility for the taking of the proposed action.

If the proposed action requires a permit under the Great Barrier Reef Marine Park Act², this is the person requiring the grant of a GBRMP permission.

The Minister may also request relevant additional information from this person.

If further assessment and approval for the action is required, any approval which may be granted will be issued to the person proposing to take the action. This person will be responsible for complying with any conditions attached to the approval.

If the Minister decides that further assessment and approval is required, the Minister must designate a person as a proponent of the action. The proponent is responsible for meeting the requirements of the EPBC Act during the assessment process. The proponent will generally be the person proposing to take the action³.

Name	Steve Taylor
Title	Director
Organisation	JUMRUM RAINFOREST PTY LTD
ACN / ABN (if applicable)	14146366029
Postal address	PO Box 1788 Emerald QLD 4720
Telephone	(07) 4980 7733
Email	steve@stevetaylor.com.au
Declaration	I declare that the information contained in this form is, to my knowledge, true and not misleading. I agree to be the proponent for this action.
Signature	
Date	14/04/2011

8.2 Person preparing the referral information (if different from 8.1)

Individual or organisation who has prepared the information contained in this referral form.

¹ If the proposed action is to be taken by a Commonwealth, state or territory government or agency, section 8.1 of this form should be completed. However, if the government or agency is aware of, and has administrative responsibilities relating to, a proposed action that is to be taken by another person which has not otherwise been referred, please contact the Referrals Business Entry Point (1800 803 772) to obtain an alternative contacts, signatures and declarations page.

² If your referred action, or a component of it, is to be taken in the Great Barrier Reef Marine Park the Minister is required to provide a copy of your referral to the Great Barrier Reef Marine Park Authority (GBRMPA) (see section 73A, EPBC Act). For information about how the GBRMPA may use your information, see http://www.gbrmpa.gov.au/privacy/privacy_notice_for_permits.

³ If a person other than the person proposing to take action is to be nominated as the proponent, please contact the Referrals Business Entry Point (1800 803 772) to obtain an alternative contacts, signatures and declarations page.

Name John Quadrio
Title Senior Environmental Scientist
Postal address 150 Walker Street, Townsville QLD 4810
Telephone 0429 623 155
Email jquadrio@golder.com.au

Declaration I declare that the information contained in this form is, to my knowledge, true and not misleading.

Signature 

Date 18/4/11

REFERRAL CHECKLIST

NOTE: This checklist is to help ensure that all the relevant referral information has been provided. It is not a part of the referral form and does not need to be sent to the Department.

HAVE YOU:

- ✓ Completed all required sections of the referral form?
- ✓ Included accurate coordinates (to allow the location of the proposed action to be mapped)?
- ✓ Provided a map showing the location and approximate boundaries of the project area?
- ✓ Provided a map/plan showing the location of the action in relation to any matters of NES?
- ✓ Provided complete contact details and signed the form?
- ✓ Provided copies of any documents referenced in the referral form?
- ✓ Ensured that all attachments are less than two megabytes (2mb)?
- ✓ Sent the referral to the Department (electronic and hard copy preferred)?