

Referral Form

Important Note:

Please read the [Referral Guide](#) that accompanies this form carefully. The guide will help you to complete the form correctly and ensure that your referral is valid. The completed form, together with the required maps and any other information you may wish to submit, should be sent to the Referrals Section of Environment Australia, as per the guide.

1 Contacts and proponent

1.1 Person making the referral

SUDAW DEVELOPMENTS LIMITED (ACN 078 021 057)
Level 26
Waterfront Place
1 Eagle Street
Brisbane Qld 4000

Contact:

Dr John Hoffman
Executive Director
Phone: (07) 3221 6179
Facsimile: (07) 3221 5979
Email: john.hoffman@babcockbrown.com

1.2 Person(s) proposing to take the action.

As above.

1.3 Person(s) who will be the proponent for the action

As above.

2 Description of the proposal

2.1 Provide a summary description of the action (two or three sentences)

To construct and operate the Nathan Dam on the Dawson River in Central Queensland. The dam will have a capacity of 880,000 ML. Once in operation, it will make controlled discharges of water for agricultural, industrial, urban and environmental uses.

2.2 Details of the *location* of the project area

Where the project is of less than 1 km² in size, provide the location as a single pair of latitude and longitude references

Locality: Central Queensland North East of Taroom. The dam wall is located at:

Latitude: 150 degrees: 06 minutes: 31 seconds:

Longitude: 25 degrees: 28 minutes: 03 seconds:

A map showing the Regional Locality Area is at Attachment 1 and is sourced from Reference 3.

Where the project area is greater than 1 km² or any dimension is greater than 1 km, provide additional coordinates to enable accurate identification of the location of the project area.

The centre of the approximately 11,000ha major ponded area is located at approximately

Latitude: 150 degrees: 0 minutes:

Longitude: 25 degrees: 30 minutes

The total ponded area is approximately 13,000ha at FSL183.5m.

Please provide a brief physical description of the project area (a more detailed description is required at section 3 of this form).

A map showing the Project Locality Area is at Attachment 2 prepared by the Queensland Department of Natural Resources.

2.3 Provide the *timeframe* in which the action is proposed to occur. Include start and finish dates where applicable.

The action is proposed to commence in July 2003. Construction will be complete by December 2005 and the ongoing regulation of the downstream flow will continue for the life of the dam.

2.4 Provide a *description* of the action, including *all* activities proposed to be carried out as part of the proposed action.

- Construction of a 27m high, roller compacted concrete dam
- Provision of road and power access
- Establishment of viewing and recreation facilities
- Environmental works including the establishment of new vegetation corridors around the ponded area
- Operate and maintain the dam and ponded area
- Ongoing regulation of the downstream flow

2.5 Provide an *explanation of the context* in which the action is proposed to take place, including any relevant planning framework, in which the action is proposed (for example, relevant management plans or State or Local Government approvals).

The lower Dawson River Valley is a region with substantial development potential, currently constrained by the lack of increased reliable water supply. It currently has a grazing, cropping and mining economy and in common with similar regional areas is stagnating or in decline.

Existing demand for water is provided for by a series of weirs with a combined storage capacity of 62,000ML with annual distributions for irrigation, industrial and urban use of around 50,000ML. This system is at capacity and consequently the region is not able to attract new development.

The agricultural and industrial potential of the region is substantial. There is 60,000ha of land identified designated as suitable for sustainable irrigation, (Theodore to Daringa and within 5km of the river thus avoiding the need for major channels). Potential exists for cotton ginning, food processing, development of sustainable forests, the expansion of the existing cotton growing industry and diversified cash crops, leading to enhanced employment opportunities and improved quality of life. Existing resource based activity includes coal mining, coal seam methane extraction, a traversing gas pipeline, high capacity rail infrastructure from the centre of the region to port and major electricity generation. The expansion and integrated development of these activities in the region is constrained by the lack of one element: water.

The development of the region would foster the development of new rail infrastructure to become part of an inland regional rail development, supported by minerals and produce transport revenue. The availability of reliable water supply in the region will have a broader strategic value of allowing 'Gladstone' type industry development to move 100 kilometres west, hence reducing the stresses on the Gladstone coastal region and its lack of water.

The project has been developed in close consultation and co-operation with the Queensland Government which has itself undertaken a number of the environmental impact assessments and reports together with a Water Allocation and Management Plan and environmental flow regulation regime, a Framework Environmental Management Plan and has issued Land and Water Management Guidelines for the region. As a consequence, it is believed that this project does not constitute a controlled action.

Approval of the project is subject to the requirements of:

- Queensland Integrated Planning Act 1997
- Queensland State Development and Public Works Organisation Act 1971
- Water Act 2000
- Environmental Protection Act 1994

2.6 Indicate whether, and in what way, the action is *related to other actions or proposals in the region.*

The development of the Daringa Weir, 300km downstream to support water distribution.

3 Description of the project area and the affected area

3.1 Describe the affected area, referring, as appropriate, to attached maps. In particular, indicate on the map the location of any of the following features: World Heritage properties, Ramsar wetlands, listed threatened species or communities and/or known habitat for these species or communities, listed migratory species and/or known habitat for these species, Commonwealth marine areas and Commonwealth land.

The location of the proposed action is shown in Attachment 2.

World Heritage Properties

No World Heritage Properties will be affected by this project. (The Great Barrier Reef World Heritage Area is more than 500km downstream at the Fitzroy River Mouth. In addition there are six regulated weirs and one river barrage between the Nathan Dam and the river mouth (Attachment 3)).

Ramsar Wetlands

There are no Ramsar Wetlands in the immediate vicinity of the Project nor downstream to the junction with the Fitzroy River. Consequently, no Ramsar Wetlands will be affected by the Project.

Listed Endangered Species

- Reodytes Leukops (Fitzroy Tortoise).

Endangered Communities

- The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin .

Listed Migratory Species

There are seven Migratory Fauna species listed under the EPBC Act 1999 for the subject area and ten Migratory Fauna Species identified in the IAS (Reference 1) which are listed under the EPBC Act 1999. These are presented at Attachment 4 prepared by PPK Environment & Infrastructure.

Commonwealth Marine Areas

There are no Commonwealth marine areas that are significantly impacted by the action.

Commonwealth Land

There is no Commonwealth land significantly impacted by the action.

3.2 Provide a *description of important features of the project area and the affected area and show these on the attached map, including (if relevant to the project area or affected area) information about:*

- a) soil and vegetation characteristics;
- b) water flows, including rivers, creeks and impoundments;
- c) the presence of outstanding natural features, including caves;
- d) gradient;
- e) any buildings or other infrastructure;
- f) any marine areas;
- g) kinds of fauna in the area; and
- h) the current state of the environment in the area, including 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.

The area around the dam and upstream of the dam is generally dedicated to grazing and cropping with a few areas of remanent vegetation. There are several farm properties, one of which will be relocated out of the impoundment area. It is also intended to revegetate impoundment surrounds to replace those areas of remanent vegetation inundated by the impounded water. Glebe Weir, seven kilometres upstream of the dam will be flooded by the proposed dam.

River flows will be modified in the already regulated river according to the requirements of the Water Allocation Management Plan (Fitzroy Basin) 1999 which is included in Water Act 2000. This will ensure appropriate environmental flows.

The significant natural feature near the dam is Nathan Gorge, the original site intended for the dam. The proposed site is some seven kilometres upstream of the Gorge to save this area from inundation, although it is already impacted by back-up from the Gylanda Weir. The dam will be fitted with a telescopic outlet source to make controlled releases of water at various depths to manage released water temperature and oxygen levels immediately downstream through the gorge.

3.3 What is the *tenure* of the project area (for example is it freehold, leasehold or some other tenure)? If practicable, show on the attached map.

Mainly freehold.

3.4 What are the current and/or proposed *land uses* for the project area?

Current land use is primarily grazing, cropping and water storage (Glebe Weir).

Proposed land use is primarily grazing, cropping and water storage (Nathan Dam)

4 Nature and extent of the likely impacts of the action

4.1 Describe, as relevant to your project, the nature and extent of *likely impacts* on the following matters protected by the EPBC Act:

- the world heritage values of a declared World Heritage property; or
- the ecological character of a declared Ramsar wetland; or
- the members of a listed threatened species (except a conservation-dependent species) or any threatened ecological community, or their habitat, or
- the members of a listed migratory species or their habitat; or
- the environment in part of the Commonwealth marine area; or
- the environment on Commonwealth land.

World Heritage Property

- The project will have no measurable impact on any declared World Heritage property. The action is more than 500km along the Dawson, Mackenzie and Fitzroy Rivers from the Great Barrier Reef World Heritage Property near the mouth of the Fitzroy River. Furthermore, it is separated from the area by six regulated weirs and one river barrage.

Ramsar Wetland

- The project will have no impact on the ecological character of a declared Ramsar Wetland as there are no Ramsar wetlands at or near the action.

Threatened Species

There is a listed threatened species and an ecological community in the area of the action.

- *Rheodytes leukops* (Fitzroy Tortoise) is claimed to be restricted to the Fitzroy catchment area. An unusual feature of the tortoise is its very large cloacal bursae that

appear to have a major respiratory function, allowing the turtles to remain submerged for long periods of time (up to 3 days). The turtles are negatively buoyant and are reported to feed on aquatic insects found attached to rock. They are a sedentary species and are reported to spend a lot of time in riffle zones where food is prevalent and water quality is good. They are reportedly rarely seen and this is thought to account for their vulnerable category.

In May 2002 as reported at Attachment 5, the Theodore Weir, about 60km downstream from the Nathan Dam site was emptied for inspection and maintenance. One hundred and sixteen (116) *Reodytes Leukops* were saved by local residents and returned to the river system. This would indicate that the species finds the bottom of ponded areas a suitable habitat. It also indicates that the species is in fact far from rare and thrives in the regulated weir system. The Nathan Dam should therefore provide suitable additional habitat.

Endangered Communities

Natural discharges and seepage of groundwater are abundant throughout the Great Artesian Basin. There are more than 600 spring complexes with multiple outlets in twelve main groups around the margins of the basin. In one of the complexes in South Australia on the south western margin there are believed to be over 1000 individual springs. These are the most notable springs in the basin extending in an arc from Marree to Oodnadatta (Reference 3)

The area of the action is located on the extreme eastern edge of the Great Artesian Basin. Springs are quite common in the recharge areas along the eastern margins and result from the 'overflow' or 'rejection' of recharge into the aquifer. Three of the twelve main groups lie on the eastern margin each with several hundred complexes with multiple individual springs as mapped by the Great Artesian Basin Consultative Council. In the vicinity of the action are two areas of spring complexes. The action will result in inundation of 26 individual springs in the vicinity. These represent a very small proportion of the springs on the eastern margin of the Great Artesian Basin and the action will not be a significant impact on spring population.

Migratory Species

The EPBC Act migratory species listed for the area are shown in Table 3-1 (Attachment 4). Of these, six species were considered likely to be present or have suitable habitat on the site.

Suitable habitat for the listed species will be affected by the proposal, resulting in the displacement of individuals from areas around the dam site. For most of the species listed, the presence of the dam and storage area will result in the provision of a larger area of suitable habitat than that which currently exists and may sustain larger populations of these species.

It was identified in the environmental impact assessment for Nathan Dam, that some of these species would not significantly benefit as they rely on woodland habitat as well as aquatic areas. No significant populations of listed species that would have specific habitat requirements that could not be found in surrounding areas were identified in the area. Therefore, because of the beneficial effects provided by additional aquatic habitat it is unlikely that the proposal will have a significant impact on the species listed.

The fauna survey undertaken for the environmental impact assessment in the vicinity of the Nathan Dam and water impoundment area, identified 10 species that are recognised under the migratory provisions of the EPBC Act. These species are listed in Table 3-2 (Attachment 4). Impacts on these species were considered in the environmental impact assessment process which has identified specific impacts to significant species listed under Queensland State legislation. However, the environmental impact assessment has not considered the significance of impacts on migratory species. Most of these species are likely to benefit from the additional aquatic habitat created by the dam storage impoundment. It is unlikely that any significant barrier to these listed migratory species will be imposed or specific habitat removed that will result in a reduction of the range and distribution of these species as the area has been extensively cleared for agriculture. After filling, increased habitat availability is likely to provide significantly greater opportunities for migratory species.

- The project will have no significant impact on the environment in any part of the Commonwealth Marine Area
- The project will have no significant impact on the environment on Commonwealth land.

4.2 Indicate if your action is:

- a) a nuclear action; or
- b) will be taken by the Commonwealth or by a Commonwealth agency; or
- c) will be taken in a Commonwealth marine area; or
- d) will be taken on Commonwealth land.

Not Applicable

5 Information sources

For information given in sections 3 and 4 of this referral, please indicate:

- (a) the source of the information; and
 - (b) how recent the information is; and
 - (c) how the reliability of the information was tested; and
 - (d) any uncertainties in the information.
1. Impact Assessment Study for the Proposed Nathan Dam (Hyder Environmental)
 - Main Report October 1997
 - Supplementary Report February 1998
 2. Water Allocation and Management Plan (Fitzroy Basin) December 1999 (Queensland Department of Natural Resources)
 3. Great Artesian Basin – Resource Study 1998, page 29 and available at www.gab.org.au
 4. Review Report on the Impact Process for the Nathan Dam Proposal (Queensland Department of Natural Resources)

Selected Extracts from this report.

- *“There is general agreement among key agencies, confirmed by the independent reviewers, that the information now gathered is sufficient to provide a sound basis on which to make a decision regarding the development of the dam”.*
- *“The possible impact of the project on the Fitzroy River Estuary and the off-shore areas (including the Great Barrier Reef) is considered to be minimal”.*
- *“On the basis of the findings of this review, the (Queensland) Government can now confirm that the impact assessment process for the Nathan Dam has been completed.”*
- Prof Cullen and Dr Hillman did not have major concerns with the issue of the possible impacts of Nathan Dam on the lower Fitzroy and offshore, *“We believe the WAMP process has adequately considered this issue on a Basin wide basis. The overall system is not being highly developed (around 20% of mean annual discharge) which we accept is modest in comparison to water developments in other basins in Australia), and the Dawson is not the major contributor of water to the coast. There is no indication that the proposed dam will change the delivery of nutrients or sediment to the Reef.*

We support the Department’s view that impacts on the Fitzroy system will be minor. Consequently we expect the hydrological impacts on coastal waters to be even less.”

6 Signatures and Declarations

6.1 Signature of person making the referral

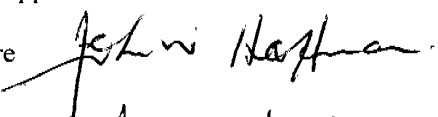
I, DR JOHN WILLIAM HOFFMAN, declare that the information contained in this form is, to my knowledge, true and not misleading.

Signature 

Date 16 August 2002.

6.2 Declaration of person nominated as proponent in Section 1.3, if different from person proposing to take the action

I, DR JOHN WILLIAM HOFFMAN, being (or agent acting on behalf of) the person nominated in Section 1.3 of this referral form as the nominated proponent agree to be designated as the proponent for the action described above if it is decided that the action requires approval under Part 9 of the EPBC Act.

Signature 

Date 16 August 2002.

Signature of person proposing to take the action

Date

6.3 Statement by person making this referral on whether or not they believe the referred action to be a controlled action and identification of relevant controlling provisions

(Note: This Section must be completed in *all cases* except where the referral is made by a State or Territory or a Commonwealth agency in relation to an action to be taken by another person.)

If you think your proposed action is not likely to have a significant impact on any of the matters listed in the table below, then you should select and complete the following statement and you should not mark any of the boxes in the table below.

I DR JOHN WILLIAM HOFFMAN, being the person making this referral and the person proposing to take the action (or agent acting on behalf of the person) believe that the action described in this referral is not a controlled action

Significant Impact Likely	Controlling Provision
No	World Heritage property (Sections 12 and 15A - significant impacts on the values of a World Heritage property)
No	Ramsar Wetland (Sections 16 and 17B - significant impacts on the ecological character of a Ramsar wetland)
No	Threatened species or ecological communities (Section 18 and Section 18A - significant impacts on a listed threatened species or a listed threatened ecological community)
No	Migratory species (Sections 20 and 20A - significant impacts on a listed migratory species)
No	Nuclear action (Sections 21 and 22A - nuclear actions)
No	Commonwealth marine area (Sections 23, 24 and 24A - actions relating to the Commonwealth marine area and fishing in coastal waters managed by the Commonwealth)
No	Commonwealth land (Sections 26 and 27A - actions relating to Commonwealth land)
No	Commonwealth action (Section 28 - actions by the Commonwealth having a significant impact on the environment)

Briefly provide reasons why you believe your proposed action is or is not a controlled action:

(Note: For an explanation of the term "controlled action", see the Referral Guide that accompanies this form.)

The proposed action is not a controlled action as the listed threatened species or ecological communities will not be significantly impacted with *Reodytes Leucops* apparently thriving in the regulated ponded areas downstream of the action and the action will create additional habitat. For ecological communities only 29 of the several thousand individual springs occurring across the Great Artesian Basin will be affected and none of the three recognised major groupings on the eastern edge of the basin will be significantly impacted.

As to migratory birds, although it is likely that some of the species listed will be affected by the proposal, it is unlikely that the proposal will have a significant impact to migratory species under the definitions of the migratory provisions of the EPBC Act 1999. In the absence of specific distribution abundance data, the conclusions in this assessment are based on the

findings of the environmental impact assessment and species behaviour and biology. This assessment indicates it is unlikely there will be no significant impact on migratory species listed under the EPBC Act because;

- the specific habitat for the species listed will not be significantly removed after implementation of the proposal; and
- that significantly restricted populations which are likely to be impacted or removed as a result of the proposal were not identified in the area.

This proposal has been the subject of extensive study on environmental impact and substantial further review. There is substantial framework in place to work with the State of Queensland and other stakeholders to ensure that there will be no significant impact on the environment by the action and that environmental sustainability can be assured with the ongoing regulatory regime.

Signature

[Handwritten Signature]

Date

16 August 2002

If the person making this referral is, or is representing, a *small business* (a business having fewer than 20 employees), please provide an estimate of the time taken to complete this form

Please Include

- The time spent reading the instructions, working on the questions and obtaining the information; and
- The time spent by all employees in collecting and providing this information.

40 hours minutes

END OF FORM