

12 September 2017

Mr Mark Fitt
Committee Secretary
Senate Standing Committees on Economics
PO Box 6100
Parliament House
Canberra ACT 2600

Re: Inquiry into the Governance and Operation of the Northern Australia Infrastructure Facility (NAIF)

Dear Mr Fitt,

I am writing to you regarding the *Inquiry into the Governance and Operation of the Northern Australia Infrastructure Facility (NAIF)* and your email dated Monday 21 August 2017.

The Australian Conservation Foundation (ACF) appeared at this hearing on Friday 11 August 2017. In addition to the material provided to the Committee Secretariat by Mr David Barnden from Environmental Justice Australia, appearing for ACF on 5 September 2017, there is one outstanding matter that ACF wishes to address. This concerns a clarification of evidence given during ACF's verbal submissions.

Clarification of Evidence

The following extract is derived from the Proof Hansard (p 19):

Senator IAN MACDONALD: Okay. Now, although I don't like to do this, because Adani is not part of the terms of reference, you would be good people to give me this information. How many environmental conditions, both state government imposed and federal government imposed, have been put onto the Adani proposal, the Carmichael mine proposal?

Senator RICE: That's not in the terms of reference, I don't think.

Senator IAN MACDONALD: I conceded that, Senator, but you've asked on nothing else except Adani, even though it's not mentioned at all in the terms of reference. Anyway, witnesses, could you tell me that?



Dr Sinclair: There are around 36 conditions, and I will be happy to send—

Senator IAN MACDONALD: Thirty-six?

Dr Sinclair: you a report that we've done examining the adequacy of those conditions. Our concerns are about some of the issues that aren't considered in those conditions, such as the impact—

Senator IAN MACDONALD: Thank you.

Dr Sinclair: of burning the coal on the environment—

Senator IAN MACDONALD: Please. This process proceeds better if I ask the questions and you give answers to my questions, not give a statement about something else you want to talk about. What I wanted to know was how many conditions there were. You say 36.

Dr Sinclair: Yes.

ACF draws the Committee's attention to the fact that Dr Sinclair's answer ("There are around 36 conditions") referred to the number of conditions attached to the Commonwealth Environment Minister's approval for Adani's Carmichael Mine under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

ACF notes that there are further conditions imposed on Adani's Carmichael coal mine and rail project by the Queensland State Government.¹ Generally, these involve conditions imposed under the project's mining lease, environmental authority and water licence. Further information about these conditions can be found by inspecting the relevant legal instruments.

ACF holds serious concerns about the adequacy of the federal and state conditions to safeguard the environment against harm from the project. Of particular concern are the climate impacts resulting from the burning of coal from the mine, the destruction of the habitat of the largest surviving population of the endangered Black-Throated Finch and impacts on the ecologically and culturally significant Doongmabulla Springs.

¹ See, eg, Tables 4.1 and 4.2 in Coordinator General (Qld), "Carmichael Coal Mine and Rail Project: Coordinator General's Evaluation Report on the Environmental Impact Statement" (2014) <http://www.coordinatorgeneral.qld.gov.au/resources/project/carmichael/carmichael-coal-mine-and-rail-cg-report-may2014.pdf>.

We draw the Committee's attention to two documents:

- A report prepared by ACF and the EDOs of Australia investigating the efficacy of the Commonwealth EPBC Act approval (**Annexure 1**), which found the federal conditions to be woefully inadequate and incapable of protecting the environment, and;
- The submission (No. 61) to the Inquiry by Dr Matthew Currell and Professor Adrian Werner, which reveals that the evidence underpinning the project's Environmental Impact Statement includes "clear misconceptions and scientific errors" that could lead to "a complete loss of flow to the [Doongmabulla] springs".

If the Committee wishes to receive further evidence about these or related matters, ACF would be happy to provide it.

For more information:

Christian Slattery | Campaigner | P: 61 402 457 895 | E: christian.slattery@acf.org.au
www.acf.org.au



LICENCE TO KILL:

Commonwealth environmental approval
for Adani's Carmichael coal mine project



**AUSTRALIAN
CONSERVATION
FOUNDATION**



EDOs of Australia





Contents

Executive summary	2
Why EPBC Act conditions matter	4
Why the Carmichael mine?	5
How do the conditions stack up?	6
1. Protecting biodiversity.....	6
Black-throated Finch.....	6
Doongmabulla Springs Threatened Ecological Community.....	8
2. Protecting World Heritage Areas.....	10
3. Maintaining transparency and accountability.....	12
Recommendations for Government	14

Executive summary

Most Australians expect the governments we elect to pass laws to protect our unique wildlife and the places we love. The strength and effectiveness of our environment laws is critical to the survival of globally-significant natural wonders like the Great Barrier Reef.

The Federal Government is responsible for protecting Australia's precious natural wonders called 'Matters of National Environmental Significance'. The key instrument it has to protect them is Australia's national environment law, the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

Under the EPBC Act, the Federal Environment Minister has the power to approve or reject projects such as Adani's Carmichael coal mine. Rarely does the Minister reject a project. Since the Act came into force, 6000 projects have been referred to the Minister and only 19 have been rejected. Most projects are approved 'subject to conditions'.

In most cases the Minister approves projects subject to conditions that are intended to allow the project to proceed without it having an unacceptable impact on the environment. The conditions are therefore critical to safeguarding our environment.

This report is about the conditions that were set by the Federal Government when the Minister approved Adani's Carmichael coal mine.

When the Federal Government approved Adani's Carmichael mine, it held out the conditions as the high water mark of approvals under the EPBC Act.

The Environment Minister re-approved the Carmichael coal mine on 14 October 2015 with 36 conditions, described as "the strictest conditions in Australian history".¹

This report asks whether the conditions connected with the approval of Adani's Carmichael mine would actually achieve their objective, or are they allowing destruction of our environment? Is the condition-setting process in fact granting Adani a licence to kill?

The scale of the development, the range of impacts triggered, the public controversy and the heavy reliance on conditions in the re-approval make the Carmichael case the perfect stress test for our nation's most important environmental law.

This report examines how the 'strictest conditions ever' stack up in three theme areas: protecting biodiversity, protecting world heritage areas and ensuring transparency and accountability.

This report asks whether the conditions connected with the approval of Adani's Carmichael mine would actually achieve their objective, or are they allowing destruction of our environment? Is the condition-setting process in fact granting Adani a licence to kill?

1. Protecting biodiversity

Protecting Australia's biodiversity is a critical role of the EPBC Act. But when you dig below the surface, the 'strictest ever' conditions will not in fact be able to prevent the mine's harmful impacts on biodiversity, in particular on the Black-throated Finch and the Doongmabulla Springs complex. Adani's Carmichael coal mine will push the endangered Black-throated Finch closer to extinction by destroying its critical habitat.

Instead of safeguarding habitat critical to the survival of the species, the conditions allow Adani to destroy this area, provided it offsets the destruction by providing alternative habitat for the species at another location. Adani is not required to protect this alternative habitat before starting construction of the mine, nor is it required to provide evidence that the offset will actually protect the finch. Perhaps most extraordinarily, should the impact on the finch from the mine be greater than expected, Adani is not required to take further action or make good the unexpected harm.

The Adani Carmichael coal mine also threatens the Doongmabulla Springs complex. These springs are culturally significant to the local Aboriginal people and are a precious source of water for a unique ecological system of species in this dry landscape. The Minister has granted approval for the mine without being certain about how it could affect the Springs. The Minister has not even been able to ascertain what level of interference will cause the Springs to dry up. The approval conditions require research programs to be conducted to establish the full extent of the impact, but these are not required before mining excavation is allowed to begin. The damage could be done before the results of any studies are known. Once a spring goes dry, it cannot be restored.



2. Protecting World Heritage Areas

The Great Barrier Reef is our most iconic World Heritage Area. The greatest threat to its continued existence is global warming. Burning the coal from Adani's Carmichael coal mine will result in 4.7 billion tonnes of climate pollution being pumped into the atmosphere and will significantly contribute to global warming. Not one of the 36 conditions addresses greenhouse gas emissions.

ACF challenged the Minister's re-approval of the Carmichael coal mine in the Federal Court, arguing that the Minister failed to properly consider the impact the burned coal from Carmichael would have on the Great Barrier Reef, a World Heritage site Australia has an obligation to protect. The Court found the Minister had complied with current law in finding there was 'no relevant impact' of emissions from the burning of coal from Carmichael on the reef. For a law that sets out to protect Australia's environment, the failure to protect our most treasured ecosystem from its greatest threat is alarming.

3. Maintaining transparency and accountability

To ensure transparent and accountable decision-making, communities need timely access to accurate and comprehensive information about the impacts of proposed resource extraction projects.

The EPBC Act provides for a public process leading up to an approval. However, the Carmichael approval is part of a recent trend towards a lack of transparency. Rather than being disclosed or analysed through the assessment process, environmental impacts and management of those impacts are frequently being deferred to the post-approval stage, largely in the form of requirements that the company develop various management plans. This means significant information about impacts on our

environment and proposed management of those impacts are undisclosed until after the approval has been granted. The Minister can even agree to exempt management plans from being made public altogether.

The right to challenge an approval made by the Minister is severely limited. Under the Act the Minister's decision to approve a project cannot be challenged on its merits. Therefore, the public has little ability to hold the Minister accountable for approval decisions and the impacts of those decisions. This is particularly concerning as the Court has emphasised the wide discretion the Minister is afforded under the Act. There is no requirement that the Minister actually protect Matters of National Environmental Significance in the process of assessing and approving projects like Carmichael.

The way forward?

The EPBC Act has been in operation for the better part of two decades, yet Australia's environmental indicators continue to decline. Australia's list of national threatened species and ecological communities has grown by more than 380 since the Act came into force.² This year the Great Barrier Reef was hit by the worst bleaching event in history – a direct consequence of climate change.³ Major projects are almost never refused, and continue to be approved with a range of conditions attached.

This report finds the conditions imposed on the Carmichael approval fail three key tests. They fail to protect biodiversity, fail to protect World Heritage values and they are not transparent or accountable.

Significant reform is needed to make sure Australia's national environmental laws fulfil their objective of protecting our beautiful and special natural places and wildlife for future generations.



Why do EPBC Act conditions matter?

The Federal Government passed the *Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)* to protect Australia's nationally and globally significant environment.

The purpose of the Act is to protect “matters of national environmental significance” (MNES). These include our unique wildlife, rivers and forests and natural World Heritage wonders like the Great Barrier Reef.

Under the EPBC Act, the Federal Minister for the Environment has the power to assess any ‘action’ that is likely to have a significant impact on a MNES.⁴ Mining projects, rail and road infrastructure projects and urban expansion projects are the sorts of ‘actions’ that are commonly assessed under the Act.⁵

If a person or company thinks the ‘action’ they are proposing is likely to have a significant impact on a MNES they must refer it to the Environment Minister,⁶ who will decide whether it requires approval under the EPBC Act and, if so, what assessment process it should be subjected to.⁷ An example of an assessment process is the preparation of an Environmental Impact Statement (EIS).

After assessing the proposed ‘action’ the Environment Minister must decide whether to approve or refuse the action.⁸ If the Minister decides to approve the proposed action he or she may attach conditions to the approval,⁹ which must be complied with.¹⁰

Approximately 350 actions are referred to the Federal Government each year. Close to 6000 referrals have been made since the EPBC Act came into force, yet in the history of the legislation only 19 have been not approved or deemed clearly unacceptable. Most projects

that proceed to assessment are approved. It is left to the conditions to mitigate and manage the impacts of actions on Australia's environment.

This means conditions applied to project approvals become the main safeguard to protecting Australia's nature and species. The strength and effectiveness of conditions is therefore imperative to the survival of precious parts of Australia's environment.

This report examines the conditions imposed on the approval of Adani's Carmichael mine as a case study to consider whether conditions under the EPBC Act are really safeguarding Australia's environment.

KEYWORDS

- **Action** includes: a project; a development; an undertaking; activity or series of activities; an alteration of any of these.
- **Environmental Impact Statement (EIS)**: Prepared by the proponent for assessment under the EPBC Act to show the impact of the project on the environment.
- **MNES**: Matters of National Environmental Significance recognised by the EPBC Act.
- **Condition**: attached by the Minister to a project approval to protect, restore or mitigate damage to a MNES.



Why the Carmichael mine?

If it goes ahead the Carmichael Coal Mine and Rail Project (Carmichael), proposed by Adani Mining Pty Ltd (Adani), would be one of the largest coal mines in the world, producing 60 million tonnes per annum of thermal coal at peak production.

Carmichael has attracted opposition in Australia and abroad for the climate pollution that would result from the burning of the coal and for its impacts on endangered species, groundwater resources and sites sacred to the local Aboriginal people, the Wangan and Jagalingou people.

The Federal Environment Minister was required to assess the Carmichael project under the EPBC Act due to the likely significant impacts it would have on:

1. World Heritage properties (section 12 & 15A);
2. National Heritage places (section 15B & 15C);
3. Wetlands (Ramsar) (sections 16 & 17B);
4. Listed threatened species and communities (sections 18 & 18A);
5. Listed migratory species (sections 20 and 20A); and
6. Great Barrier Reef Marine Park (sections 24B & 24C).¹¹

The Environment Minister first approved Carmichael under the EPBC Act on 24 July 2014 subject to 36 conditions which he described as “the absolute strictest of conditions”.¹²

Mackay Conservation Group successfully challenged the lawfulness of the approval in 2015. The parties by consent asked the Federal Court to set aside the approval on 4 August 2015 on the basis that the Minister failed to consider the approved conservation advices for two threatened species, the Yakka Skink and the Ornamental Snake, making the Minister’s decision to approve the mine unlawful.

The Environment Minister re-approved Carmichael on 14 October 2015 (the **re-approval**), with 36 updated conditions, this time described by the Federal Environment Minister as “the strictest conditions in Australian history”.¹³

The scale of the development, the range of impacts triggered, the public controversy and the heavy reliance on the conditions of the re-approval make the Carmichael mine the perfect stress test for our nation’s most important environmental laws.

The Federal re-approval of the mine sits alongside a suite of Queensland state law approvals. Detailed consideration of these laws is outside the scope of this report. However, where appropriate some interactions with the conditions of the Queensland State Environmental Authority issued on 2 February 2016 are noted.¹⁴

In 2016, community group Coast and Country challenged the Queensland Government’s approval of the mine in the Queensland Land Court. This case considered issues that directly overlap with the Federal approval. This State court process provides unique information to help analyse the adequacy of the Federal Government’s approval process because evidence-based consideration is not allowed under the EPBC Act challenges that have taken place in the Federal Court of Australia. (EPBC Act challenges in the Federal Court examine the process, rather than the merits.)

How do the Carmichael conditions stack up?

1. Protecting biodiversity

Protecting Australia's unique biodiversity is one of the main objectives of the EPBC Act.¹⁵ To help meet this objective, threatened species and ecological communities are listed under the EPBC Act.

Adani's Environmental Impact Assessment identified four listed threatened species and one listed threatened ecological community to be present in the Carmichael mine area. Twelve more species or ecosystems are likely to be present or potentially occur in the area.¹⁶ This report focuses on the endangered Black-throated Finch (southern), and the Great Artesian Basin spring, the Doongmabulla Spring complex.¹⁷



Black-throated Finch (southern)

The Black-throated Finch (Southern) *Poephila cincta cincta*, is a tiny beautiful bird that once inhabited landscape stretching from northern New South Wales and south-eastern Queensland to eastern Queensland.¹⁸ The species has lost approximately 80 per cent of its former range and is now found only in a few sites. It is nationally listed as endangered under the EPBC Act, endangered in Queensland and recently declared extinct in New South Wales. The finch population in and around the mine is one of the last remaining in Australia.¹⁹

The finch population in and around the mine is one of the last remaining in Australia. The mine will irreversibly damage habitat critical to the species' survival.

WHAT IS AN OFFSET?

Offsets are a common type of condition imposed by the Minister under the EPBC Act. The Minister may allow damage to the environment on the condition that the proponent 'offset' the loss of biodiversity by taking a compensatory action somewhere else. For example, the government may permit the bulldozing of an endangered tree species in an area where a company wants to dig a mine on the condition that the company arranges for a greater number of those particular trees to be planted in a different location. In theory this may result in a net increase in the population of that species.

The challenge, however, is that the application of offsets for threatened species is poorly monitored and their effectiveness is highly questionable.²¹ In fact, rather than being the panacea for our environmental woes, the science indicates much of the environmental damage from a mine or a logging operation simply cannot be offset.²² One study found that in building the Sydney Olympic Park the only way to prevent the net loss of two frog species would be to secure an area 19 times the size of the habitat being destroyed.²³ Offset policies tend to entrench biodiversity decline and loss.²⁴ A set of guidelines for the use of offsets is outlined in the government's EPBC Act offsets policy.

The mine will irreversibly damage habitat critical to the species' survival.²⁰ The significant impact on the existing finch population is largely unavoidable within the current mine proposal. This means the conditions put in place by the Environment Minister really are the last safeguards for this species. The Minister approved the mine with the condition that the impact on these species is 'offset' by protecting alternative habitat in another location, whilst permitting the destruction of critical habitat.

ANALYSIS OF APPROVAL CONDITIONS

The Minister applied two main conditions to manage the impact of the proposed Carmichael mine on the finch:

1. Legally secure at least 31,000 hectares of suitable habitat for the finch to offset the impact on the population;²⁵ and
2. Submit a Biodiversity Offset Strategy for approval which details the offsets.²⁶

The ultimate effectiveness of the conditions is difficult to scrutinise due to the lack of any publicly available information on the exact offset measures Adani will undertake (as discussed in relation to transparency and accountability below). However, even without access to the detail, the following key weaknesses are apparent:

- a. Adani has been permitted to destroy habitat that is critical to the survival of the finch;
- b. Adani can start knocking down trees and digging the mine before any offsets are put into effect;
- c. There is no scientifically robust evidence that the proposed offset will work; and
- d. If the offsets do not work Adani is not required to take further action, even if impacts are greater than expected.

The re-approval conditions do not create safeguards for the survival of the endangered Black-throated Finch. To be effective, the conditions need to put the survival of the finch first and ensure that the mine can only proceed when it is clear the finch population is being enhanced by successful offsets, as promised by the approval, rather than destroyed.

Impacts prior to offsets

One of the overarching principles of offsets, which is reflected in the government EPBC Act offsets policy, is they should be timely.²⁷ This means they should be implemented either before or at the same time as the impacts arising from the project.²⁸ For example, one condition of the approval of the Terminal 4 Coal Port expansion in New South Wales requires the company to establish compensatory habitat for migratory shorebirds prior to starting any construction that would impact the migratory shorebird's existing habitat.²⁹

Similarly, in the case of *Gerroa Environment Protection Society Inc v Minister for Planning and Cleary Bros (Bombo) Pty Ltd* [2008] NSWLEC 173, the NSW Land and Environment Court did not permit clearing of an existing wildlife corridor until a new functioning corridor had been established.³⁰ In this case it took seven years for the offset corridor to be sufficiently established and functioning before the original corridor's trees and understorey were allowed to be destroyed.³¹

In contrast, the Carmichael approval conditions only require the first offset for the finch to be legally secured **within two years** of the commencement of mining operations.³² Mining operations cannot commence until the Biodiversity Offset Strategy is approved. But approval of the strategy does not necessarily mean any actions on the ground.

At present there is no safeguard to stop the most important habitat for this endangered finch being destroyed prior to any compensatory habitat being secured (or possibly enhanced). It can take a significant time period for offset areas to produce a conservation gain, such as an increase in the number of the target species. This time lag adds to the risk and uncertainty of offsets actually achieving the desired environmental gains.³³

No evidence that offset will achieve a conservation goal

Another overarching principle of offsets, outlined in the government's EPBC Act offsets policy, is that they must deliver an overall conservation outcome that benefits the species. The first principle for a suitable offset is that it must deliver a conservation gain that "improves or maintains the viability of the protected matter".³⁴ This means the result should be an increase in the number of individuals in a species or no further decline in the overall population (sometimes called "no net loss"). Further the federal policy states that offsets should be based on scientifically robust and transparent information that sufficiently shows the benefits for the protected species.³⁵

Expert scientists, charged with the protection and restoration of the Black-throated Finch through the EPBC Recovery Planning process,³⁶ said mining in the Galilee Basin would have detrimental and irreversible consequences for the finch. Specifically they said the mine would push the species closer to the brink of extinction and the proposed offset measures would not mitigate this impact.³⁷

Expert evidence presented to the Queensland Land Court showed the proposed offset strategy for the finch is not capable of meeting this offset principle.³⁸ There is no scientific evidence of an offset for finches ever being successfully established and functioning to support an increase in Black-throated Finch numbers.³⁹ The recovery team noted that "offset measures will not compensate for the loss of habitat".⁴⁰

In a recently published peer reviewed paper it was demonstrated that more than half of the remaining finch habitat was covered by mining tenements and, even if offsets did work for the species, there was insufficient habitat available to offset all the proposed mining project projects in the Galilee.⁴¹

In the face of such scientific uncertainty as to whether any offset for the finch could be successful, and the knowledge that the Carmichael mine would destroy the largest known population's habitat, a more appropriate condition would be to protect habitat critical to the species' survival and demonstrate the effectiveness of the proposed offsets (by recording the effect of supporting increasing populations over time) before allowing the damage to the habitat. Similarly a stronger condition for safeguarding the finch would be to set trigger thresholds so if annual monitoring shows a net loss of finch populations in the region, work impacting on habitat would be required to stop.



Doongmabulla Springs Threatened Ecological Community

As well as protecting threatened species, the EPBC Act is meant to protect Threatened Ecological Communities.⁴²

The Doongmabulla Springs are a group of permanent fresh water artesian springs recognised as part of an ecological community listed under the EPBC Act⁴³. Located 400 kilometres from the coast and adjacent to the Carmichael mine lease they are one of the few permanent sources of water in this dry central Queensland landscape.

The Doongmabulla Springs are estimated to be more than one million years old. They provide precious groundwater for a unique ecological system of species. A leading global springs expert described these Australian desert springs as some of the last remnants of springs in natural condition on the planet.⁴⁴ The local Aboriginal people, the Wangan and Jagalingou, consider the Doongmabulla Springs one of their most sacred sites.⁴⁵ The Queensland Land Court accepted that the Doongmabulla Springs are of exceptional ecological significance.⁴⁶

The Carmichael approval puts an unknown number of these springs at risk.

In accessing the coal seam Adani will reduce the water pressure in the aquifer containing the coal. There is a flow on effect to related aquifers called 'drawdown'. The extent to which the Doongmabulla Springs are connected to the coal seam aquifer, or related aquifers, is unknown. But essentially drilling holes in the landscape for mining risks interfering with the water source for the springs on which many ecological systems rely.

Groundwater modelling produced by Adani assumes limited connection between the coal seam aquifer and the springs and estimates a 'drawdown' of up to about 20 centimetres at the springs.⁴⁷ However, it is difficult to directly translate this to impacts on the springs, as the pressure reduction required for each spring to go dry is not known. An unknown number of the springs may dry up from a drawdown that is less than the nominated impact threshold. If the springs go dry, even temporarily, endemic species will not survive and will become extinct at the site.⁴⁸

It is uncertain which aquifers supply the water flowing at the springs. The impact on the spring may be considerably worse if the source water for the springs is more connected to the coal seam aquifers than Adani has assumed in its models. A Queensland government report has recently acknowledged that determining "[t]he source aquifer of the springs is critical to considering any potential impact of the planned Carmichael Mine".⁴⁹

The Doongmabulla Springs are estimated to be more than one million years old. They provide precious groundwater for a unique ecological system of species. A leading global springs expert described these Australian desert springs as some of the last remnants of springs in natural condition on the planet. The local Aboriginal people, the Wangan and Jagalingou, consider the Doongmabulla Springs one of their most sacred sites.

ANALYSIS OF APPROVAL CONDITIONS

The Environment Minister approved the project without knowing the extent of impacts on the springs. By granting the approval prior to establishing the extent of impacts the Minister has shifted the responsibility for preventing and managing potentially devastating impacts from his office to the post-approval conditions and enforcement. The conditions of the re-approval require Adani to complete further studies and modelling to determine the extent of the impacts and produce plans to demonstrate how the impacts will be managed. The conditions do not require the results of these studies to be made public, or for the Minister and the community to assess whether the impact is acceptable in light of this additional information prior to the project commencing. Ultimately, the community may only know the full extent of the impacts on the Doongmabulla Springs after they are already damaged, at which point it may be too late to save them.

The main re-approval conditions relied on by the Minister to protect the springs relate to impact thresholds to be set out in a Groundwater Management and Monitoring Plan, and further studies and modelling. These are discussed below.

Impact threshold

The Minister's re-approval conditions do provide a basic impact threshold for the Doongmabulla Springs.

Conditions 3 and 4 of the re-approval require a Groundwater Management and Monitoring Plan to be approved prior to the commencement of excavation. This Plan must contain an interim impact threshold for the Doongmabulla Springs Complex of a groundwater drawdown not exceeding 20 centimetres.⁵⁰

For many of the springs it is not known at what pressure reduction they will go dry, accordingly it cannot be said that a drawdown of 20 centimetres will protect the springs.

In the Queensland Land Court Adani presented analysis that claimed the pressure reduction could lead to a proportionate reduction in spring flow, in the likely range of three to five per cent.⁵¹ Under cross examination, Adani's groundwater expert agreed that some of the small springs, known as 'seeps', are likely to go dry with a drawdown of about five centimetres,⁵² which is significantly less than the conditioned drawdown of 20 centimetres.

The groundwater expert for the conservation group agreed a drawdown of about 20 centimetres would cause a number of the springs to go dry, but the expert said it was not possible to know exactly how many.

The spring ecologists agreed once the springs went dry, even temporarily, the endemic species would become extinct.⁵³

Further independent expert analysis of this condition supports the view that the "20 centimetre drawdown trigger may in fact not be a good predictor of changes in [water flow] at the springs".⁵⁴ Better conditions would be to require the monitoring over time of actual water levels

in the springs, spring flows and wetland areas, and spring source aquifers so their relationship can be understood and the impact of the mine better determined.⁵⁵

Importantly, there is nothing in the conditions that requires the impacts to cease if they are found to have a greater impact on the springs than predicted.

Information on the Groundwater Management and Monitoring Plan is not yet publicly available,⁵⁶ and may not be made public. The full impact of the mine on the springs may only become apparent once the damage is visible to the naked eye, at which point it may be too late to save the springs.

Further studies and modelling to determine the extent of the impacts and produce plans

Conditions 27 and 28 of the re-approval require Adani to submit a Rewan Formation Connectivity Research Plan for approval prior to the excavation of the mine pits. The Rewan Formation Connectivity Research Plan will set out a program of research to identify if some or all of the source water for the springs originates from the coal seam aquifer. This would require the occurrence of a water flow pathway, such as a fault, through the Rewan Formation.

Without a full investigation the source of the water for the springs remains unknown.⁵⁷ If the springs are highly connected to the coal seam aquifer, mining will likely cause the loss of the springs.⁵⁸ Ecologists providing evidence agreed that if the source of the springs is below the Rewan Formation and flows are lost, the impact would be very unlikely or infeasible to offset.⁵⁹

Although the conditions require a plan for research to be approved they do not require the research to be actually undertaken or the outcomes of the research to be known (publicly or otherwise) prior to the mining commencing and therefore after the impact has occurred.

The drawdown trigger of 20 cm may detect the high impact in the springs that scientists predict will occur if the source of springs is below the Rewan Formation. However, because the 20 cm drawdown threshold is a poor indicator of spring impact, an unknown number of springs may become extinct prior to the threshold being triggered.

Ultimately the extent of the impacts on the springs will be uncertain until the primary research, such as a local survey using high-resolution seismic reflection at the Doongmabulla Springs,⁶⁰ are complete. It is hoped that this research will be required by the Rewan Formation Connectivity Research Plan. Enquiries by environment groups revealed that as late as mid 2015 a Rewan Formation Connectivity Research Plan had not been submitted to the Federal government in respect of the first EPBC Act approval. Certainly at the time of writing such a plan was still not publicly available. However, as with the Groundwater Management and Monitoring Plan, there is no obligation for the outcomes of the Rewan Formation Connectivity Research Plan to be made public.



2. Protecting World Heritage Areas

Australia is home to some of the most unique and spectacular ecosystems on the planet. Many of these have been recognised as global treasures by being included in the list of World Heritage Areas by the UNESCO World Heritage Committee.

Under international law Australia has an obligation to “do all it can..., to the utmost of its resources” to protect World Heritage Areas for future generations.⁶¹ To help meet this obligation the Australian Parliament included World Heritage Areas as ‘matters of national environmental significance’ under the EPBC Act.⁶²

Australia’s most iconic World Heritage Area is the Great Barrier Reef. The natural beauty of the Great Barrier Reef is not only inherently valuable, it also contributes \$5.6 billion into the Australian economy and supports 68,000 jobs.⁶³

Global warming is widely acknowledged to be the greatest long-term threat to the Great Barrier Reef, including within the Federal Government’s Reef 2050 Plan and Great Barrier Reef Outlook report.⁶⁴

One of the main impacts of climate change on the Great Barrier Reef is the increased risk of coral bleaching due to increasing temperatures and slowing in coral growth through ocean acidification. Mass bleaching

Global warming is widely acknowledged to be the greatest long-term threat to the Great Barrier Reef, including within the Federal Government’s Reef 2050 Plan and Great Barrier Reef Outlook report.

was unknown before 1979 but bleaching events have increased in frequency and intensity in line with climate change.⁶⁵ The latest bleaching event in 2016 affected 93 per cent of the Great Barrier Reef and scientists described it as the worst coral bleaching event in recorded history.⁶⁶ Early reports now indicate that 35 per cent of the corals are now dead or dying on the northern and central sections of the Great Barrier Reef, with a reef wide mortality of approximately 22 per cent.⁶⁷

The Carmichael coal mine will be responsible for 4.7 billion tonnes of greenhouse gas emissions.⁶⁸ Professor Ove Hoegh-Guldberg’s report provided to the Minister on

the impacts of climate change on the Great Barrier Reef stated, “the contribution of the carbon dioxide emitted from the coal extracted from the mine over its lifetime represents a very significant contribution to the impacts being felt on the Great Barrier Reef”.⁶⁹

Despite the significance of the impacts, none of the 36 conditions imposed by the Minister refer to greenhouse gas emissions. Due to the range of variables affecting the actual “net” emissions, the Minister stated he found it difficult to identify the necessary relationship required under the EPBC Act between the mine and any possible impacts on the Great Barrier Reef.⁷⁰

The Minister decided the emissions from the project would be managed and mitigated through national and international frameworks.⁷¹ However, current international law frameworks are insufficient to limit global warming to anywhere near the extent required to prevent harm to the Great Barrier Reef World Heritage Area.⁷² Global efforts to achieve the necessary reduction in emissions to limit warming are severely hampered if the Environment Minister continues to approve new fossil fuel projects that lock in high levels of future emissions.

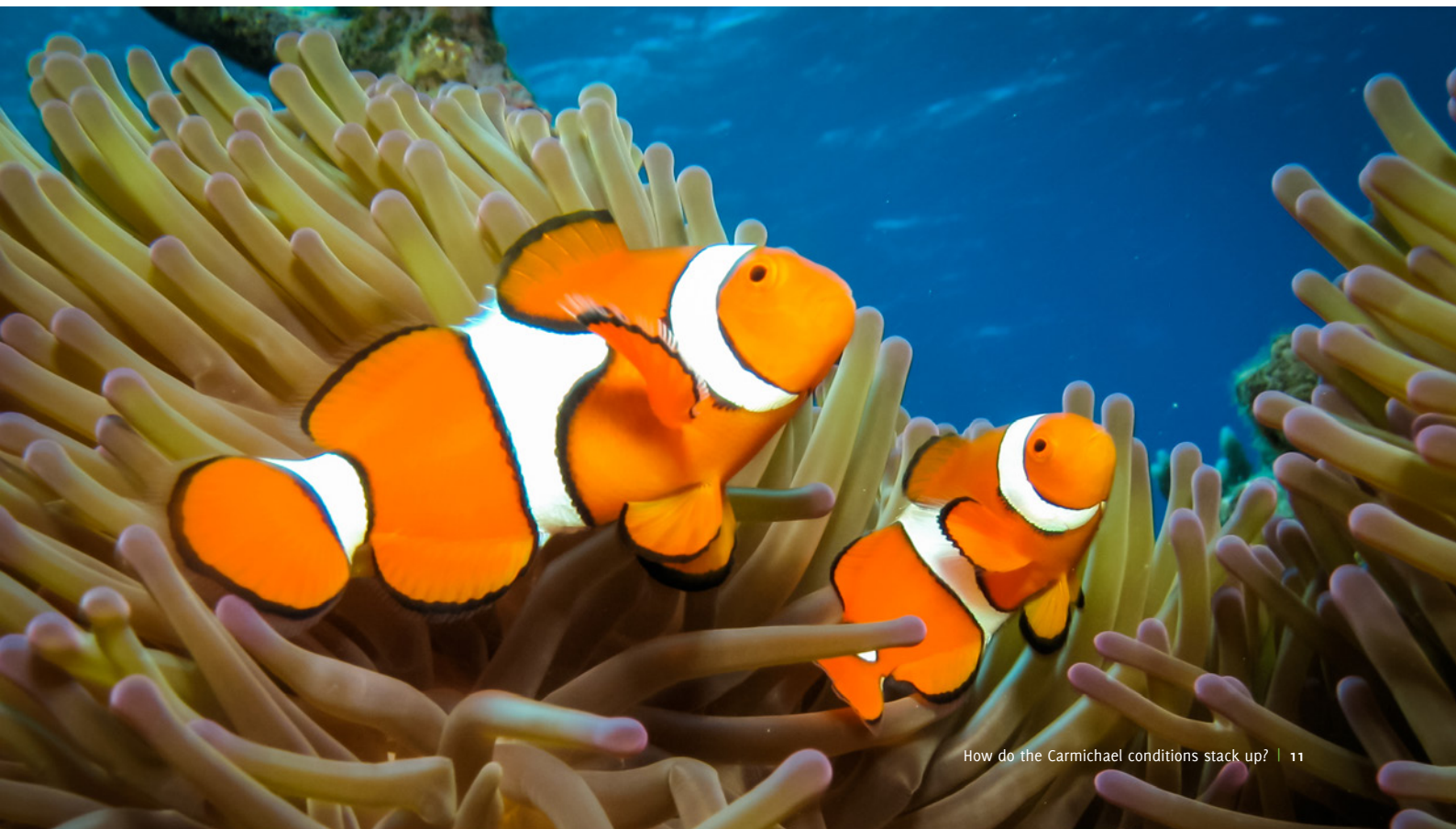
Adani did make some commitments to reduce greenhouse emissions from its operations as part of the Queensland Government’s assessment,⁷³ but none of these relate to Scope 3 greenhouse gas emissions, generated by the burning of the coal from the mine. Scope 3 emissions account for 99 per cent of the emissions that will result from the project. Adani’s commitments are not part of the approval conditions and are not enforceable by the Federal Government.

Consequently, the vast majority of greenhouse gas emissions resulting from the Carmichael mine are left unrestrained by Australian law.

ACF challenged the Minister’s re-approval of the Carmichael coal mine on the basis the Minister failed to properly consider the impact of the mining and burning of coal from Carmichael on the Great Barrier Reef. The Court found the Minister had complied with current law, and was entitled to find that there was ‘no relevant impact’ of emissions from the burning of coal from Carmichael on the reef. Further the Court emphasised the wide discretion afforded to the Minister under Act stating, “it is the Minister who must accept responsibility and be accountable for the merits of his decision”.

Despite the significance of the impacts, none of the 36 conditions imposed by the Minister refer to greenhouse gas emissions.

It is clear substantial reform of the EPBC Act is required if, in applying the Act that was established to protect Australia’s environment, our Minister is not required to protect one of our most treasured ecosystems from its greatest threat. Climate change was a part of the 1997 Heads of Agreement on environmental responsibilities between the states and territories and the Australian Government that preceded the development of the EPBC Act.⁷⁴ In fact a climate trigger was openly contemplated and canvassed in drafting the Act in 1999 but was set aside.⁷⁵ Instead decision makers elected to not even mention the words climate change anywhere in the text despite it being one of the most significant threats, not just for the Reef, but the environment as a whole.





3. Maintaining transparency and accountability

Most Australians care deeply about our precious forests, rivers, oceans and reefs and expect the governments to have plans to protect nature and wildlife. We depend on our environment for the air we breathe, the food we eat, the shelters we live in. Proposals that damage our shared environment, affect all of us.

The right to a healthy environment is a fundamental human right.⁷⁶ We have the right to know about proposals that will harm our environment and a right to participate in decisions that affect us.⁷⁷

Anything short of full public disclosure and access to information about decisions invites suspicion and reduces public confidence in the assessment and decision making process. Approvals for large projects can be worth billions of dollars to proponents who make political donations and engage lobbyists, creating fertile ground for apprehensions of bias or corruption unless the process is transparent and accountable.

The EPBC Act makes some steps towards transparency and accountability in the environmental assessment process by providing for public notice and submissions on key steps and requiring publication of key notices and decisions on the internet and in print.⁷⁸ However, this style of public consultation is limited in shaping an

approval decision. The regulator and the proponent have a close regulatory relationship under the EPBC Act, while the community has limited access to information. For example, recommendation and assessment reports – the key documents a Minister uses to decide whether or not to approve a project – are not released to the public.

The Carmichael approval comes at a time when a distinct lack of transparency is becoming a feature of the approval process. Rather than being disclosed or analysed through the assessment process, environmental impacts and management responses are frequently deferred to the post-approval stage, largely in the form of requirements to develop various form of management plans. This means significant information about damage to the environment, and proposed ‘management’ of that damage, remains undisclosed until after the approval is granted.

These post-approval plans are not publicly available, making it impossible for the public to know what the

damage the project will do to the environment or exactly how the company claims it will manage the damage. It also makes it impossible to know how effective the conditions are likely to be.

This type of regulatory behaviour is driven by the competing pressures of routinely inadequate assessment data and the political imperative to approve major resource extraction projects. This, coupled with under-resourced regulatory agencies, leaves the environmental impact assessment regime as the last priority. Complex analysis and management interventions are deferred to be resolved through post-approval management plan requirements.

The public's right to challenge an approval made by the Minister is severely limited. Under the Act only judicial review of a Minister decision is permitted. The merits of an approval are left to the determination of the Minister

The right to a healthy environment is a fundamental human right.⁷⁶ We have the right to know about proposals that will harm our environment and a right to participate in decisions that affect us.⁷⁷

alone and are not subject to review. This was recently emphasised by the Federal Court in the Australian Conservation Foundation's challenge to the Carmichael approval. The judgment found 'it is the Minister who must accept responsibility and be accountable for the merits of his decision'.⁷⁹ This limits the community's ability to hold the Minister to account for poor approval decisions that may lead to significant environmental destruction.

ANALYSIS OF APPROVAL CONDITIONS

The re-approval conditions require a number of plans to be prepared and approved by the Minister before commencing work on certain aspects the proposal, in particular conditions 3, 5, 9, 20, 25 and 27, require:

1. Groundwater Management and Monitoring Plan;
2. Matters of National Environmental Significance plan/s;
3. Biodiversity Offset Strategy and Great Artesian Basin Offset Strategy;
4. 3D Seismic Survey Management Plan;
5. Great Artesian Basin Springs Research Plan; and
6. Rewan Formation Connectivity Research Plan.

These plans are meant to provide significant information about the likely impact and management actions proposed by the project, for example, as has been discussed above:

1. The Biodiversity Offset Strategy is to provide the detail on how the project is to achieve a net benefit for the Black-throated Finch, despite having a devastating impact on its habitat within the mining lease;
2. The Rewan Formation Connectivity Research Plan is meant to determine whether the Doongmabulla Springs are directly connected to the coal seams, if they are the impacts will be significantly worse than currently estimated.

Enabling this information and assessment to be available after the public environmental impact assessment process potentially shifts a significant part of the assessment away from public view. There are no statutory provisions for disclosure of such plans, unlike the legislative requirements for disclosure and consultation under the EPBC Act referral and assessment process.

At the time of writing we could only locate two of the plans, reports or programs required by the conditions on the Adani website - a Groundwater Flow

Model Review and a Species Management Plan. The Species Management Plan did not cover the detailed plans required for the Black-throated Finch or the Doongmabulla Springs. Furthermore, under condition 36 of the approval the Minister can agree for plans to be exempt from the requirement to publish the plans.⁸⁰ The Minister is also not required to publish any agreement made about this exemption. The only way of knowing if a plan, report or program is approved but not published is to make an application under the *Freedom of Information Act 1982* (Cth). FOI requests are time consuming and expensive and can take months to years before the result is finally known.

Environment groups have attempted to use the FOI laws to understand the post-approval assessments but have had very limited success. Environment groups were advised that as at December 2015 the exemption under condition 36 had not been exercised but access to the current status of many of the critical plans has been denied.

Environment groups have been seeking access to the Biodiversity Offset Strategy for over 12 months under FOI laws. These requests have been denied by Adani who continues to challenge the release. The consequence is that interested parties, including species experts, are unable to scrutinise the sufficiency of the proposed management actions.

The over-reliance on post-approval management plans highlights inadequacies in the overall assessment of the Carmichael project, and a concerning trend for condition-setting for EPBC Act approvals. The management of complex problems and risks, such as groundwater contamination, threatened species management and the delivery of offsets, has been relegated to being resolved only once the project has been approved, out of public scrutiny and accountability.

Recommendations for Government

Conditions for threatened species

1. Establish national policy settings and legislative instruments that protect critical habitat for threatened species.
2. Strengthen conditions attached to project approvals for threatened species so the conditions:
 - a. Prevent impacts on critical habitat;
 - b. Set thresholds that are consistent with conservation goals;
 - c. Demand scientifically robust transparent monitoring and public disclosure of conservation outcomes and threshold triggers;
 - d. Require damaging work to stop if monitoring shows a decline in a species' population.
3. Reform the national offsets framework so it:
 - a. Excludes matters that are not able to be offset;
 - b. Is based on robust science;
 - c. Is transparent in assessment and implementation;
 - d. Offsets are established prior to any impact;
 - e. Is codified in law.

Conditions for threatened ecological communities

1. Base thresholds for the impact a project has on a species or ecosystem on evidence-based measures, not unproven estimates.
2. Do not approve projects if information about the nature and scale of a potentially serious and irreversible impact is unclear or unavailable – that is, apply the precautionary principle.
 - a) Adaptive management is inappropriate where there is a risk of serious and irreversible impacts.
3. Where the impacts will not be serious or irreversible but can be further understood by post-approval research plans, make plans publicly available before the damage is allowed to proceed.

World Heritage Areas and climate change

1. Amend national environment laws to include an explicit climate trigger so direct and indirect impacts on the climate are assessed under national law.
2. Amend national environment laws to ensure decisions made under it are consistent with Australia's international commitments to United Nations treaties and agreements.
3. Require specific action if emissions thresholds are exceeded.

Transparency and accountability

1. Undertake complex and high risk assessments of environmental impacts and mitigations at the statutory assessment stage and consult the public.
2. Release all assessment and recommendation reports to the public when a project is approved or refused.
3. Make all management plans and monitoring data publicly available online within 10 days of approval.
4. Publish any changes to management plans within 10 days along with a 'tracked' changes version identifying the changes.
5. Publish offset details, including location and management actions, through a central register once approved, and make monitoring and spatial data accessible to the public.
6. As a matter of principle the Minister should not be able to make specific agreements to keep management plans and monitoring documents confidential. Where plans are not released the onus should be on the Minister to explain which plans are being kept secret and why.
7. National environmental law should allow merits review of approval decisions.

Endnotes

- 1 The Hon. Greg Hunt MP, Minister for the Environment, Media Release 15 October 2015, Carmichael Coal Mine and Rail Infrastructure project, available at <https://www.environment.gov.au/minister/hunt/2014/pubs/mr20140728.pdf>
- 2 Peter Hannam, Australia's Environmental peril revealed in five charts, Sydney Morning Herald (28 June 2016) <http://www.smh.com.au/environment/australias-environmental-peril-revealed-in-five-charts-20160622-gpp62l.html>
- 3 Daniel Cressy, Coral Crisis: Great Barrier Reef bleaching is "the worst we've ever seen", Nature (13 April 2016) <http://www.nature.com/news/coral-crisis-great-barrier-reef-bleaching-is-the-worst-we-ve-ever-seen-1.19747>.
- 4 EPBC Act, Div 1.
- 5 See the definition of Actions in EPBC Act, s523.
- 6 EPBC Act, s68.
- 7 EPBC Act, s75.
- 8 EPBC Act, 130(1).
- 9 EPBC Act, 134(1).
- 10 EPBC Act, s142A.
- 11 Australian Government, 6 January 2011, Notification of Referral Decision and designated proponent - controlled action decision on assessment approach - Carmichael Coal Mine and Rail Project (EPBC 2010/5736).
- 12 The Hon. Greg Hunt MP, Minister for the Environment, Media Release 28 July 2014, Strictest conditions on the Carmichael Coal Mine project, available at <https://www.environment.gov.au/minister/hunt/2014/pubs/mr20140728.pdf>
- 13 The Hon. Greg Hunt MP, Minister for the Environment, Media Release 15 October 2015, Carmichael Coal Mine and Rail Infrastructure project, available at <https://www.environment.gov.au/minister/hunt/2014/pubs/mr20140728.pdf>
- 14 The lawfulness of that approval was being challenged in the Queensland Supreme Court at the time of writing.
- 15 EPBC Act, s1(c).
- 16 EIS (2013), Volume 1, Chapter 11 – Matters of National Environmental Significance; EIS (2013), Volume 4, Appendix H – Matters of National Environmental Significance.
- 17 EIS (2013), Volume 4, Appendix H – Matters of National Environmental Significance, pages ix and 71.
- 18 Australian Government Department of Environment, Species Profile and Threat Database, *Poephila cincta cincta* — Southern Black-throated Finch, http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64447
- 19 Adani Mining Pty Ltd v Land Services of Coast and Country Inc & Ors [2015] QLC 48, paragraphs [359] and [406].
- 20 Birdlife Australia, Endangered Black-throated Finch in the Galilee <http://birdlife.org.au/documents/NEWS-BTF-Carmichael-brief.pdf>
- 21 Maron, M., Hobbs, R. J., Moilanen, A., Matthews, J. W., Christie, K., Gardner, T. A. & McAlpine, C. A. 2012 Faustian bargains? Restoration realities in the context of biodiversity offset policies. *Biological Conservation*, 155, 141-148.
- 22 Business and Biodiversity Offsets Programme (BBOP). 2012. Resource Paper: Limits to What Can Be Offset. BBOP, Washington, D.C http://bbop.forest-trends.org/guidelines/Resource_Paper_Limits.pdf
- 23 Evan J. Pickett, Michelle P. Stockwell, Deborah S. Bower, James I. Garnham, Carla J. Pollard, John Clulow, Michael J. Mahony, 2013, Achieving no net loss in habitat offset of a threatened frog required high offset ratio and intensive monitoring, *Biological Conservation* ,157, 156–162.
- 24 Maron, M., Bull, J.W., Evans, M.C., Gordon, A., 2015 Locking in loss: baselines of decline in Australian biodiversity offset policies. *Biological Conservation*, 192, 504-512.
- 25 Condition 8, EPBCA approval.
- 26 Conditions 9 - 11 EPBCA approval.
- 27 Australian Government, 2012, *Environmental Protection and Biodiversity Conservation Act 1999, Environmental Offsets Policy*, page 6, principle 7.
- 28 Australian Government, 2012, *Environmental Protection and Biodiversity Conservation Act 1999, Environmental Offsets Policy*, page 23, Offset Requirement 7.7.
- 29 Condition 1(a) of the EPBC Act approval 2011/6029 requires compliance with the NSW Planning Assessment Commission conditions, of which condition A7 requires completion of the Tomago Offset Site prior to the commencement of construction of the Site which would impact on migratory shorebird habitat.
- 30 Preston, B.J., 2016 Biodiversity Offsets: Adequacy and efficacy in theory and practice, 33 *Environment and Planning Law Journal* 93, 107.
- 31 Preston, B.J., 2016 Biodiversity Offsets: Adequacy and efficacy in theory and practice, 33 *Environment and Planning Law Journal* 93, 107.
- 32 Re-approval, Condition 8 and Table 1.
- 33 Preston, B.J., 2016 Biodiversity Offsets: Adequacy and efficacy in theory and practice, 33 *Environment and Planning Law Journal* 93, 106.
- 34 Australian Government, 2012, *Environmental Protection and Biodiversity Conservation Act 1999, Environmental Offsets Policy*, page 6, principle 1 and page 17, Offset Requirement 7.1.
- 35 Australian Government, 2012, *Environmental Protection and Biodiversity Conservation Act 1999, Environmental Offsets Policy*, page 6, principle 7 and page 23, Offset Requirement 7.7.
- 36 EPBC Act, Chapter 5, Part 13, Division 5, Subdivision A.
- 37 An extract of the position statement is in the Appendix.
- 38 See Lindsay Agnew, 2015, Statement of Evidence on the Black-throated Finch - Prepared for the Land Court of Queensland, page 22, <http://envlaw.com.au/wp-content/uploads/carmichael31A.pdf>.
- 39 See Lindsay Agnew, 2015, Statement of Evidence on the Black-throated Finch - Prepared for the Land Court of Queensland, page 20, <http://envlaw.com.au/wp-content/uploads/carmichael31A.pdf>.
- 40 Black-throated Finch Recovery Team, August 2015, Position statement regarding the threat to the Black-throated Finch by mining, infrastructure development and associated changes to land management in the Galilee Basin.
- 41 Vanderduys EP, Reside AE, Grice A, Rechetelo J (2016) Addressing Potential Cumulative Impacts of Development on Threatened Species: The Case of the Endangered Black-Throated Finch. *PLoS ONE* 11(3): e0148485. doi:10.1371/journal.pone.0148485.
- 42 EPBC Act, for example ss18(5)-(6), 146K and 196.
- 43 The Doongmabulla Springs Complex is listed as Great Artesian Basin TEC under the EPBC Act and comprises
(a) Joshua spring;
(b) the Moses springs group of at least 60 springs; and
(c) Little Moses spring.
- 44 Queensland Land Court Transcript *Adani Mining Pty Ltd v Land Services of Coast and Country Inc & Ors* page 10-40, lines 6-31.
- 45 Wangan & Jagalingou Family Council, 2 October 2015, Submission to the United Nations Special Rapporteur of the rights of indigenous peoples.
- 46 Adani Mining Pty Ltd v Land Services of Coast and Country Inc & Ors [2015] QLC 48, paragraphs [173] and [279].
- 47 The EIS predicted maximum drawdowns of groundwater of 0.19 m at Joshua Spring and from less than 0.05 m to 0.12 m at the Moses Springs assuming that the source aquifer is above the Rewan Formation, see *Adani Mining Pty Ltd v Land Services of Coast and Country Inc & Ors* [2015] QLC 48, paragraph [263]. However, contested expert hydrological evidence was that even a 20cm drawdown could cause an unknown number of the springs to go dry - Expert report on Hydrogeological Modelling by Dr Adrian Werner, paragraphs [48].
- 48 Joint expert report on Springs Ecology by Dr Roderick Fensham and Mr Bruce Wilson, lines 119-120.

- 49 Department of Science, Technology and Innovation, 2016, Lake Eyre Basin Spring Assessment, part 8.6, available at <https://publications.qld.gov.au/dataset/lake-eyre>
- 50 EPBC Act Re-approval condition 3(d).
- 51 *Adani Mining Pty Ltd v Land Services of Coast and Country Inc & Ors* [2015] QLC 48, paragraphs [237].
- 52 *Adani Mining Pty Ltd v Land Services of Coast and Country Inc & Ors* [2015] QLC 48, paragraphs [242].
- 53 Joint expert report on Springs Ecology by Dr Roderick Fensham and Mr Bruce Wilson, lines 119-120.
- 54 Currell M.J. *In Press*: Drawdown “triggers”: a misguided strategy for protecting groundwater-fed streams and springs. *Groundwater* Doi: 10.1111/gwat.12425.
- 55 Currell M.J. *In Press*: Drawdown “triggers”: a misguided strategy for protecting groundwater-fed streams and springs. *Groundwater* Doi: 10.1111/gwat.12425.
- 56 Only the much earlier pre-approval draft from 2014 is available: http://www.adanimining.com/pdfs/AEIS_Final_Documents/6_Draft_Groundwater_Monitoring_Program.pdf
- 57 See, most recently, Department of Science, Technology and Innovation, 2016, Lake Eyre Basin Spring Assessment, available at <https://publications.qld.gov.au/dataset/lake-eyre>
- 58 *Adani Mining Pty Ltd v Land Services of Coast and Country Inc & Ors* [2015] QLC 48, paragraphs [267].
- 59 Expert report on Springs Ecology by Dr Roderick Fensham, paragraphs [30]. See also *Adani Mining Pty Ltd v Land Services of Coast and Country Inc & Ors* [2015] QLC 48, paragraphs [295] to [296].
- 60 As suggested in, Department of Science, Technology and Innovation, 2016, Lake Eyre Basin Spring Assessment, at p 183, available at <https://publications.qld.gov.au/dataset/lake-eyre>
- 61 World Heritage Convention, Article 4.
- 62 United Nations Educational, Scientific and Cultural Organisation, Convention Concerning the Protection of the World Cultural and Natural Heritage, Adopted by the General Conference at its seventeenth session Paris, 16 November 1972, Article 4; EPBC Act, s137.
- 63 Deloitte Access Economics Report 2013, Economic Contribution of the Great Barrier Reef. <https://www.environment.gov.au/system/files/resources/a3ef2e3f-37fc-4c6f-ab1b-3b54ffc3f449/files/gbr-economic-contribution.pdf>, page 31.
- 64 Reef 2050 Long-Term Sustainability Plan, Commonwealth of Australia 2015,iii. <https://www.environment.gov.au/system/files/resources/d98b3e53-146b-4b9c-a84a-2a22454b9a83/files/reef-2050-long-term-sustainability-plan.pdf>; GBRMPA 2009, Great Barrier Reef Outlook Report, 172. <http://hdl.handle.net/11017/2855>; State Party Report on the State of Conservation of the Great Barrier Reef World Heritage Area (Australia), Commonwealth of Australia, 2015, 21. <https://www.environment.gov.au/system/files/resources/cb36afd7-7f52-468a-9d69-ab6dd7da156b/files/gbr-state-party-report-2015.pdf>.
- 65 Brown B. E. (1997) Coral bleaching: causes and consequences. *Coral Reefs* 16:S129- S138; Hoegh-Guldberg, O. (1999) Climate change, coral bleaching and the future of the world’s coral reefs. *Mar. Freshwater Res.* 50:839–866. Hoegh-Guldberg, O., Mumby, P.J., Hooten, A. J., Steneck, R.S., Greenfield, P., Gomez, E., Harvell D. R, Sale, P.F., Edwards, A.J., Caldeira, K., Knowlton, N., Eakin, C. M., Iglesias-Prieto, R., Muthiga, N., Bradbury, R.H., Dubi, A., and Hatzioiols, M. E., (2007) Coral Reefs under Rapid Climate Change and Ocean Acidification. *Science* 318: 1737–1742.
- 66 Mooney, C. (2016). ‘And then we wept’: Scientists say 93 percent of the great barrier reef now bleached. Washington: WP Company LLC d/b/a The Washington Post; Hoegh-Guldberg, O., & Ridgway, T. (2016). Coral bleaching hits great barrier reef as global temperatures soar. *Green Left Weekly*, (1090), 10; Michael Slezak, ‘Great Barrier Reef: 93% of reefs hit by coral bleaching’, *The Guardian* (Online), 20 April 2016 <http://www.theguardian.com/environment/2016/apr/19/great-barrier-reef-93-of-reefs-hit-by-coral-bleaching>.
- 67 <https://www.coralcoe.org.au/media-releases/coral-death-toll-climbs-on-great-barrier-reef>
- 68 Reasons for the Re-approval, paragraph 136.
- 69 Professor Ove Hoegh-Guldberg (2015) The current and future impacts of climate change and ocean acidification on the Great Barrier Reef - Report prepared for an objections hearing in the Land Court of Queensland regarding the proposed Carmichael Coal Mine, paragraph 52 <http://envlaw.com.au/wp-content/uploads/carmichael17.pdf>
- 70 Reasons for the Re-approval, paragraph 140.
- 71 Reasons for the Re-approval, paragraph 141.
- 72 A climate which is safe for the GBR limits warming to below 1C, current pledges under the United Nations Framework Convention on climate change are consistent with 2.7C warming. See, for example: IPCC (2014) AR5, Working Group II, Climate Change 2014 - Impacts, Adaptation and Vulnerability, Section 19.6.3.2 https://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap19_FINAL.pdf; GBRMPA. (2014). Great Barrier Reef Region Strategic Assessment – Strategic Assessment Report. GBRMPA. Townsville; Professor Ove Hoegh-Guldberg (2015) The current and future impacts of climate change and ocean acidification on the Great Barrier Reef - Report prepared for an objections hearing in the Land Court of Queensland regarding the proposed Carmichael Coal Mine, <http://envlaw.com.au/wp-content/uploads/carmichael17.pdf> ; Rogelj et al (2016): Paris Agreement climate proposals need a boost to keep warming well below 2°C. *Nature*[doi:10.1038/nature18307].
- 73 Carmichael Coal Mine and Rail project: Coordinator-General’s evaluation report on the environmental impact statement May 2014, Proponent’s Commitments M7.1 to M7.5. <http://statedevelopment.qld.gov.au/resources/project/carmichael/carmichael-coal-mine-and-rail-cg-report-may2014.pdf>
- 74 Heads of agreement on Commonwealth and State roles and responsibilities for the Environment Council of Australian Governments, 1997 <https://www.environment.gov.au/resource/heads-agreement-commonwealth-and-state-roles-and-responsibilities-environment>
- 75 Possible application of a greenhouse trigger under the Environment Protection and Biodiversity Conservation Act 1999 : consultation paper. Canberra : Environment Australia, 1999 36 p
- 76 Gabcikovo Nagymaros Project (Hungary v Slovakia) (Separate Opinion of Vice President Weeramantry) [1997] ICJ 97, 110 [Separate Opinion]; Asia Pacific Forum Secretariat, Human Rights and The Environment Background Paper (September 2007) Asia Pacific Forum <http://www.mcmillan.ca/Files/SOCarroll_HumanRightsandtheEnvironment.pdf>; Human Rights and Equal Opportunity Commission, Human Rights and Climate Change Background Paper (April 2008) Human Rights and Equal Opportunity, 3
- 77 The United Nations Conference on Environment and Development, ‘Rio Declaration on Environment and Development’ June 1992, Principle 10.<<http://www.unep.org/documents.multilingual/default.asp?documentid=78&articleid=1163>
- 78 See, for example EPBC Act, s74(3) inviting public comment on controlled actions, and s131A inviting public comment on taking of an action.
- 79 *Australian Conservation Foundation Incorporated v Minister for the Environment* [2016] FCA 1042, per Griffiths J at [4].
- 80 The re-approval condition 36 states: “Unless otherwise agreed to in writing by the Minister, the approval holder must publish all management plans, reports, and programs referred to in these conditions of approval on their website. Each management plan, report, and program must be published on the website within one month of being approved.”

Image credits

Front Cover	Great Barrier Reef. Photo: Copyright Troy Mayne
Inside Cover	Dead coral near Heron Island. Photo: Xanthe Rivett
Page 3	Southern Black-throated Finches. Photo: Ali Sanderson
Page 4	Eucalypt flower and beetle. Photo: Ali Sanderson
Page 5	Port Kembla Coal Terminal, NSW. Photo: Ali Sanderson
Page 6	Southern Black-throated Finch. Photo: Stanley Tang
Page 8	Doongmabulla Springs, QLD. Photo: Ali Sanderson
Page 10	Sweetlips. Photo: tchami, flickr
Page 11	Clownfish in coral. Photo: Alex Merwin
Page 12	ACF Shine a light for the reef event. Photo: James Thomas
Back Page	Doongmabulla Springs, QLD. Photo: Ali Sanderson
Back Cover	Southern Black Throated Finch. Photo: Stanley Tang

A scenic view of a pond with water lilies and a forest background. The pond is filled with green lily pads and several white water lilies in various stages of bloom. The water reflects the surrounding trees and sky. The background is a dense forest of tall trees with green foliage.

Australian Conservation Foundation

The Australian Conservation Foundation is Australia's national environment organisation. We are a quarter of a million people who speak out, show up and act for a world where forests, rivers, people and wildlife thrive.

EDOs of Australia

EDOs of Australia is the network of community legal centres that specialise in public interest environmental law. We provide legal advice, litigation services, law reform and community education to communities across Australia to help them to protect the environment through law.



**AUSTRALIAN
CONSERVATION
FOUNDATION**

Australian Conservation Foundation

Floor One, 60 Leicester Street
Carlton VIC 3053

T (03) 9345 1111
E acf@acf.org.au
www.acf.org.au

 Australian Conservation Foundation
 @AusConservation



EDOs of Australia

New South Wales (Head Office)

Level 5, 263 Clarence Street
Sydney NSW 2000

T 1800 626 239
T (02) 9262 6989
www.edo.org.au