Internal use only	
Reference Number	/

Nomination to change the conservation class of a species under the Queensland *Nature Conservation Act 1992*

Complete this form to nominate a species for assessment of its conservation class under the *Nature Conservation Act 1992* (NC Act). Any subspecies, variety, race, hybrid, mutation or geographically separate population (hereafter 'species') can be nominated. The appropriate conservation class will be selected during an expert assessment process and, following approval processes, reflected in the next suitable update of the NC Act.

A species may be nominated to an appropriate conservation class from any other conservation class. The nomination assessment process may result in a species being recommended to the conservation class as nominated, or to a class better supported by scientific data and expert opinion. Assessments and nominations will be shared with the Commonwealth and other Australian jurisdictions within the species' distribution.

All plant and vertebrate species native to Queensland are protected under the NC Act and classified as Least Concern unless found eligible for a different conservation class. Invertebrate species are only protected under the NC Act if specifically named under a conservation class. A species can be nominated for listing or reassignment from any conservation class to:

A national threat category:

- Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (E) or Vulnerable (V) if it meets at least one of the International Union for Conservation of Nature (IUCN) criteria for species at risk of extinction

A state threat class:

- Near Threatened (NT) if the species meets at least one of the criteria for species at risk of becoming threatened in the future based on concerns relating to population dynamics or threats
- Least Concern (LC) if evidence is provided that no criteria for a higher class have been met, and the species won't become eligible for a higher class in the foreseeable future should conservation actions cease due to reclassification.

The assessment of species against the national threat categories reflected in this form complies with the Memorandum of Understanding for the Common Assessment Method (CAM) between the Commonwealth and Australian states and territories. The objective of the CAM is for partner jurisdictions to adopt each other's national assessments as appropriate. Information about the CAM can be found at https://www.qld.gov.au/environment/plants-animals/wildlife-permits/common-assessment.

To nominate a species with an Australian distribution that is not restricted to Queensland, use the nomination form and guidelines at http://www.environment.gov.au/biodiversity/threatened/nominations/forms-and-guidelines and email the completed form to the Australian Government at EPBC.nominations@environment.gov.au.

Important notes for completing this form

- **To enable a species eligibility for listing to be assessed against the criteria, please complete the form as comprehensively as possible by providing a response in each box with an orange border.**
- Completing a nomination is a demanding task. Nominators are encouraged to seek advice from experts where appropriate to assist in completing the nomination form.
- The opinion of scientific experts may be cited as personal communication with their approval. Please provide the experts names, qualifications and contact details (including employment in a government agency if relevant) in the reference list at the end of the form.
- Include any available information and analysis or state when the required information is not available.
- Figures, tables and maps can be included at the end of the form or provided as separate electronic files or hardcopy documents (referenced as appendices or attachments in your nomination).
- Cross-reference relevant areas of the nomination form where needed.
- **Reference all information sources**, both in the text and in a reference list at the end of the form.
- Identify confidential material and the reason it is sensitive. With the exception of information you have identified as confidential, nominations under the CAM process may be made available by a state, territory or the Commonwealth Government to experts or the public for comment.
- If the species is listed nationally, the Australian Government will publish nomination information on its website. Your details as nominator will not be released and will be treated as confidential information.
- Guidance on interpreting this nomination form can be found in the "*Guidelines for Assessing the Conservation Status of Native Species*" developed by the Australian Government under the EPBC Act here http://www.environment.gov.au/biodiversity/threatened/nominations/forms-and-guidelines. Although not fully relevant under the NC Act, the guidelines provide assistance on several aspects of this form. Please email SpeciesTechnical.Committee@des.qld.gov for further advice on completing the nomination.

Further information on selected questions

INTRODUCTION

Species native to Queensland may be nominated to any conservation class under the NC Act, including to transfer between classes. If the taxon at risk is a population or hybrid, or if you wish to know if it has been unsuccessfully nominated under the NC Act in the past, please contact the Queensland Department of Environment and Science for advice at SpeciesTechnical.Committee@des.qld.gov.au.

To search for a species' conservation class under the NC Act please refer to the *Nature Conservation (Wildlife) Regulation 2006*: https://www.legislation.qld.gov.au/view/html/inforce/current/sl-2006-0206.

You can also search the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) list of threatened species in the Species Profile and Threats Database (SPRAT) at www.environment.gov.au/cgi-bin/sprat/public/sprat.pl.

The full lists of threatened fauna and flora under the EPBC Act are available here:
www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=fauna
www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=flora.

You can find a list of nominated species that did not meet the assessment criteria for listing under the EPBC Act at www.environment.gov.au/biodiversity/threatened/unsuccessful-species.html.

A nomination to transfer a species from a threatened conservation class to Least Concern or Near Threatened under the NC Act need not address sections marked with an asterisk (*).

SCIENTIFIC AND COMMON NAMES OF NOMINATED SPECIES

- Provide the currently accepted scientific and common name(s) for the species (including Indigenous names, where known). Note any other scientific names that have been used recently such as superseded names.

TAXONOMY

- Record the species' authority and the taxonomic group to which it belongs (Family name is sufficient for plants; both Order and Family name are required for fauna).
- Is the species known to hybridise with other species? Describe any cross-breeding with other species in the wild, indicating where and how frequently this occurs.

DISTRIBUTION

- In accordance with the CAM, the Commonwealth is the default assessment 'lead' for species occurring across multiple Australian jurisdictions, and the nomination will be subject to the prioritisation and assessment process under the EPBC Act. Download the nomination form here http://www.environment.gov.au/system/files/pages/d72dfd1a-f0d8-4699-8d43-5d95bbb02428/files/nomination-form-species.pdf, and email it to epbc.nominations@environment.gov.au. Further information on the EPBC Act nomination, prioritisation and assessment process is available at http://www.environment.gov.au/biodiversity/threatened/nominations.
  Note: where the relevant jurisdictions agree, a State or Territory (rather than the Commonwealth) may take the lead on assessing a cross-jurisdictional species, in consultation with the Commonwealth and other jurisdictions.
- A nomination for a species endemic to Queensland or with its only Australian distribution in Queensland, for example a species only occurring in Queensland and Papua New Guinea, can be assessed under the NC Act. Please submit your completed nomination form to SpeciesTechnical.Committee@des.qld.gov.au.
- Describe the species' current geographic distribution within Queensland, and where applicable, outside Australia.
- Provide a map, if available, indicating latitude, longitude, map datum and location names
  - Indicate the percentage of the global population that occurs in Queensland, and what is its significance?
  - Is the Queensland population distinct, geographically isolated, or does part or all of the population migrate into/out of the Queensland jurisdiction?
  - Explain the relationship between the Queensland population and the global population.
  - Do global threats affect the Queensland population?
- Give locations of other existing or proposed populations such as populations that are captive, propagated, naturalised outside their range, recently re-introduced to the wild, and planned to be re-introduced. Note if these sites have been identified in recovery plans. Provide latitude, longitude, map datum and location name, where available, in an attached table.
- Give details of fauna species' home ranges/territories including any relevant daily and seasonal or irregular movement patterns, such as arrival/departure dates if migratory.
- Does the species occur within an EPBC Act listed ecological community? You will find a list of EPBC Act listed ecological communities here: www.environment.gov.au/cgi-bin/sprat/public/publiclookupcommunities.pl.

BIOLOGY/ECOLOGY

- **Life cycle**: Provide detail on the age at sexual maturity, average life expectancy, natural mortality rates, and generation length
  - "*Generation length*" is defined as the average age of parents of the current cohort (i.e. newborn individuals in the population), and reflects the turnover rate of breeding individuals in a population. Generation length is greater than the age at first breeding and less than the age of the oldest breeding individual, except in species that breed only once. Where generation length varies under threat, use the more natural pre-disturbance generation length. It is often calculated as = (longevity + age at maturity)/2. Provide details of the method(s) used to calculate the generation length.
- **Reproduction**: Provide detail on the reproductive requirements of this species.
  - **Flora**: When does the species flower and set fruit? What conditions are needed for this? What are the pollinating and seed dispersal mechanisms? If the species reproduces vegetatively, describe when, how and what conditions are needed. Does the species require a disturbance regime (e.g. fire, cleared ground) to reproduce?
  - **Fauna**: provide an overview of the species' breeding system and breeding success, including: when it breeds; what conditions are needed for breeding; whether there are any breeding behaviours that may make it vulnerable to a threatening process.
- **Habitat**
  - Provide information on aspect, topography, substrate, climate, forest type, associated species, sympatric species and anything else that is relevant to the species' habitat.
  - Explain how habitats are used (e.g. breeding, feeding, roosting, dispersing, basking, etc.).
  - Does the species use refuge habitat (e.g. in times of fire, drought or flood)? Describe this habitat.
- **Feeding (fauna):**

- Summarise the feeding behaviours, diet, and the timing/seasonality associated with these. Include any behaviour that may make the species vulnerable to a threatening process.

- **Movement (fauna)**: provide information on daily and seasonal movement patterns.

IDENTIFICATION OF KNOWN THREATS AND IMPACTS OF THE THREATS

- For each threat, describe:
  a. whether it is actual or potential
  b. how and where it impacts on this species
  c. what its effect has been so far (is the threat known or suspected?, does it only affect certain populations?) Present supporting information/research).
  d. its expected effect in the future (is the threat known or suspected?, does it only affect certain populations?, is there supporting research/information?) Present supporting information/research).
  e. its relative importance or the magnitude of the impact on the species.

- Identify and explain any additional biological characteristics particular to the species that are threatening to its survival (e.g. low genetic diversity).
- If subject to natural catastrophic events, i.e. events with a low predictability that are likely to severely affect the species, identify the type of event, its likely impact, and its likelihood of occurrence (e.g. a drought/cyclone in the area every 100 years). If **climate change** is an important threat to the species, provide referenced information on how climate change might significantly increase the species' vulnerability to extinction. Please refer to the *Guidelines for Assessing the Conservation Status of Native Species*: http://www.environment.gov.au/system/files/pages/d72dfd1a-f0d8-4699-8d43-5d95bbb02428/files/tssc-guidelines-assessing-species-2018.pdf.

*CONSERVATION ADVICE: THREAT ABATEMENT AND RECOVERY ACTIONS

- Describe how threats are or could be abated and/or species recovered.
- Identify who is undertaking these activities and how successful the activities have been to date.
- Describe any mitigation measures or approaches that have been developed specifically for the species at identified locations. Identify who is undertaking these activities and how successful the activities have been to date.
- For species nominated as Extinct in the Wild, provide location details for any naturalised or captive populations and the level of human intervention required to sustain the species.

IMPACT OF TRANSFERRING A THREATENED SPECIES TO NEAR THREATENED OR LEAST CONCERN

- Only complete this section if you are nominating a species for transfer to Near Threatened or Least Concern from a class of nationally threatened wildlife (Extinct, Extinct in the Wild, Critically Endangered, Endangered or Vulnerable).
- Provide details of the expected impact on the species if conservation actions ceased following its transfer out of a threatened wildlife class.

CURRENT LISTING CLASS AND CATEGORY

- Note: The term 'class' under the NC Act is equivalent to the term 'category' under the EPBC Act.
- Select the species' current class under the NC Act where applicable. Search the species' NC Act class here: https://www.legislation.qld.gov.au/view/html/inforce/current/sl-2006-0206.
- Select the species' current category under the EPBC Act where applicable. Search the Australian Government SPRAT Database here: www.environment.gov.au/cgi-bin/sprat/public/sprat.pl.

NOMINATED LISTING CLASS

- **After completing the section 'Eligibility against the criteria'** sufficient evidence should be available to determine your response to this section. Please select the NC Act class to which the species is being nominated.

REASONS FOR A NOMINATION TO TRANSFER TO ANOTHER CLASS

Please describe why the species is being nominated to transfer to another conservation class in Queensland:

- *Genuine.* The change in class is the result of a genuine status change that has taken place since the previous assessment. For example, the change is due to an increase in the rate of decline, a decrease in population or range size or habitat, or declines in these for the first time (owing to increasing/new threats).
- *Knowledge.* The change in class is the result of new knowledge, e.g. owing to new or newly synthesised information about the status of the taxon (e.g. better estimates for population size, range size or rate of decline).
- *Taxonomy.* The change in class is due to a taxonomic change adopted during the period since the previous assessment. Such changes include:

- *newly split* (the taxon is newly elevated to species level)
- *newly described* (the taxon is newly described as a species)
- *newly lumped* (the taxon is recognised following lumping of two previously recognised taxa)
- *no longer valid/recognised* (either the taxon is no longer valid, e.g. because it is now considered to be a hybrid, variant form or subspecies of another species, or the previously recognised taxon differs from a currently recognised one as a result of a split or lump).

- *Mistake*. The previous class was applied in error.
- *Other.* The change in class is the result of other reasons not easily covered by the above, and/or requires further explanation. Examples include change in assessor's attitude to risk and uncertainty.

INITIAL LISTING

- The reasons for the initial NC Act listing may be available in the original nomination for the species. This can be obtained by emailing the Department of Environment and Science's Species Technical Committee at SpeciesTechnical.Committee@des.qld.gov.au.
- The reasons for EPBC Act listing may also be available. Search for the species' EPBC Act listing and conservation advice for threatened species in the SPRAT Database www.environment.gov.au/cgi-bin/sprat/public/sprat.pl.
- If there is insufficient information to provide details of the reasons for the original listing, please state this.

CHANGES IN SITUATION LEADING TO THE NOMINATION TO TRANSFER TO ANOTHER CLASS

- Describe the changes that have occurred or are likely to occur to the species' population, range or habitat that influence the nomination to change the species' conservation class.

ELIGIBILITY AGAINST CRITERIA

- For a species to be eligible as Near Threatened or a class of threatened wildlife, it must be assessed as meeting **at least one** of the five 'criteria' on this nomination form. For example, for a species listed as Vulnerable to be transferred to the Endangered class, it must meet the threshold/s for at least one of the five criteria for Endangered.
- A species does not have to be found eligible for the same class under all criteria; however, all questions must be answered. If information is not available for a particular criterion, a statement to this effect is required.
- If you hold unpublished data that support assessment of a criterion, you must provide them with the nomination.
- Standards for assessing a species' conservation status in Australia align with the IUCN Red List Criteria and Categories. Please refer to the IUCN guidelines for explanations of how to address the criteria http://s3.amazonaws.com/iucnredlist-newcms/staging/public/attachments/3151/redlistguidelines.pdf.

DECLARATION

In signing this nomination form, you agree to grant the Queensland Government (as represented by the Department of Environment and Science) a perpetual, non-exclusive, worldwide, royalty-free licence to use, reproduce, publish, communicate and distribute information that you have provided in the nomination form that is not referenced to other sources with the exception of information specifically identified by you as confidential, in websites and publications and to promote those websites and publications in any medium.

As nominator, your details are automatically subject to the provisions of the *Privacy Act 1988* and will not be divulged to third parties. The Commonwealth, State and Territory governments have agreed to collaborate on national threatened species assessments using the CAM. As part of this collaboration, your nomination, including your details as nominator, may be provided to other government jurisdictions, who will also observe these privacy and confidentiality arrangements.

If you subsequently agree to be cited as the author of specific, cited information, you will be acknowledged in all publications and websites in which that information appears, in a manner consistent with the *Style Manual for Authors, Editors and Printers* (latest edition).

Nomination form to change the conservation class of a species in Queensland

Details of the nominated species

SCIENTIFIC NAME OF SPECIES (SUBSPECIES, VARIETY, ETC. TO BE SPECIFIED WHERE RELEVANT)

Mitrantia bilocularis

COMMON NAME(S)

Click or tap here to enter text.

TAXONOMY

Provide any relevant detail on the species' taxonomy (e.g. authors of taxon or naming authority, year and reference; synonyms; Family and Order).

P.G.Wilson & B.Hyland

Wilson, P. G., and Hyland, B. P. M. (1988). New taxa of rainforest Myrtaceae from northern Queensland. *Telopea* ***3****(2),* 257-271.

Myrtales: Myrtaceae

*CONVENTIONAL ACCEPTANCE OF TAXONOMY

Is the species' taxonomy conventionally accepted?

☒Yes
☐No

*DESCRIPTION

Provide a description of the species. Include where relevant its distinguishing features, size and social structure. How distinct is this species in its appearance from other species? How likely is it to be misidentified?

Tree to 25 m with slight buttressing and flaky, fissured bark (Wilson and Hyland 1988). Leaves obovate-elliptical, with dense oil glands, 7-12 cm long and 3-5 cm wide with a petiole 0.4-1 cm long. Inflorescence terminal or axillary, to 12 cm long with cream flowers. Fruit brown, 6.5-10.5 mm wide, with projecting valves 4-5 mm from fruiting hypanthium. Seeds pale brown, irregularly ovoid and 6-8 mm long.

Mitrantia is a monotypic genus, related to *Ristantia* and *Sphaerantia* but has much-reduced staminal fascicles and distinctive fruit; with two exserted capsule valves, containing a single seed (Wilson and Hyland 1988).

DISTRIBUTION

Provide a succinct overview of the species' known or estimated current and past distribution, including international/national distribution. Provide a map if available.

Is the species' habitat protected within the reserve system (e.g. national parks, Indigenous Protected Areas, or other conservation estates, private land covenants, etc.)? If so, which populations? Which reserves are actively managed for this species? To your knowledge, which reserves are being actively managed in way that provides incidental benefits for this species? Give details.

Mitrantia bilocularis is known from a very restricted distribution in the Whyanbeel locality in the Wet Tropics bioregion (Department of the Environment 2012). The Extent of occurrence (EOO) and Area of occupancy (AOO) are calculated as 4 km^2 based on verified herbarium specimen records and a 2 km x 2 km grid cell (IUCN 2019; Queensland Herbarium 2020).

Mitrantia bilocularis was first collected in 1967 from the historic Whyanbeel logging area (Timber Reserve 55) with subsequent collections in 1974, 1975 and 1976 (Queensland Herbarium 2020). Very little is known of the species distribution and population demographics due to the paucity of collection records and associated details. *Mitrantia bilocularis* occurs on a very specific substrate (see description of habitat in Biology/Ecology section), which is restricted in the region (A. Ford, pers. comm. 2019).

Mitrantia bilocularis is rare where it occurs. The species was present at Whyanbeel during surveys in 2018, although no recent collections representing new occurrences have been made since 1976 despite extensive surveys in the area (A. Ford, pers. comm. 2019). The total population is estimated as <250 mature individuals (A. Ford, pers. comm. 2019). If more subpopulations are present, they are likely to be small and scattered (A. Ford,

pers. comm. 2019). All known records of the species are considered to represent a single subpopulation in this assessment given their close proximity within connected habitat.

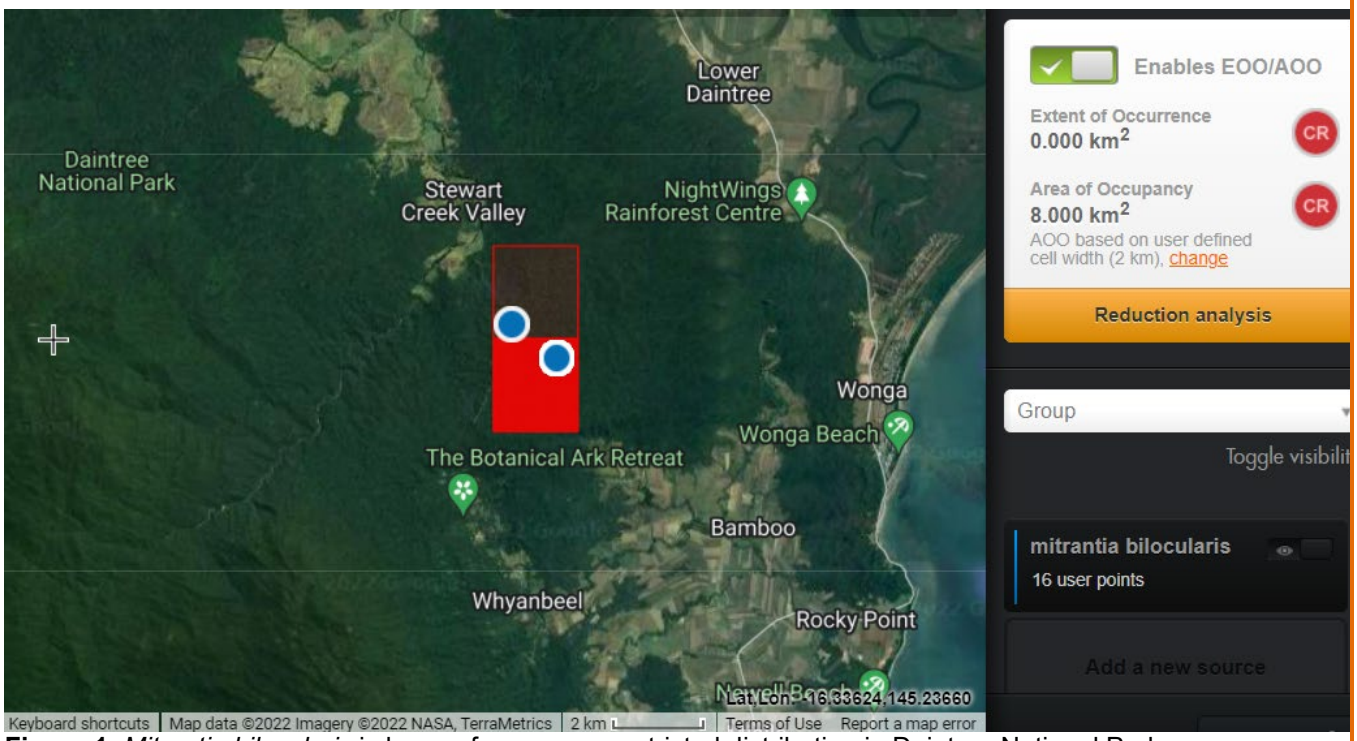

Figure 1. *Mitrantia bilocularis* is known from a very restricted distribution in Daintree National Park near Whyanbeel. The species has an EOO and AOO of 4 km^2. Map generated on GeoCat (Bachman et al. 2011).

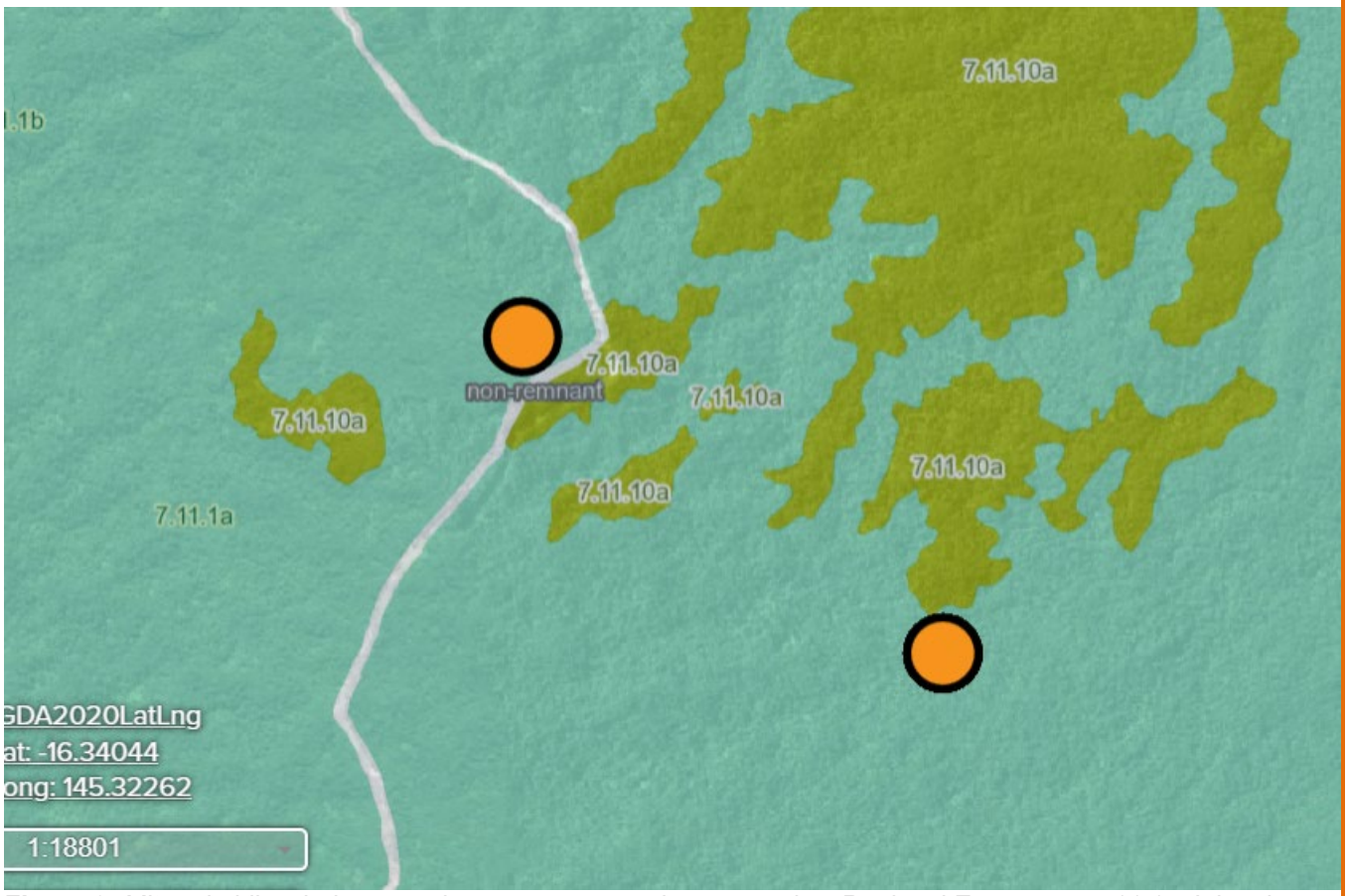

Figure 2. *Mitrantia bilocularis* occurs in remnant vegetation mapped as Regional Ecosystem 7.11.1a. It has been collected adjacent to a power easement.

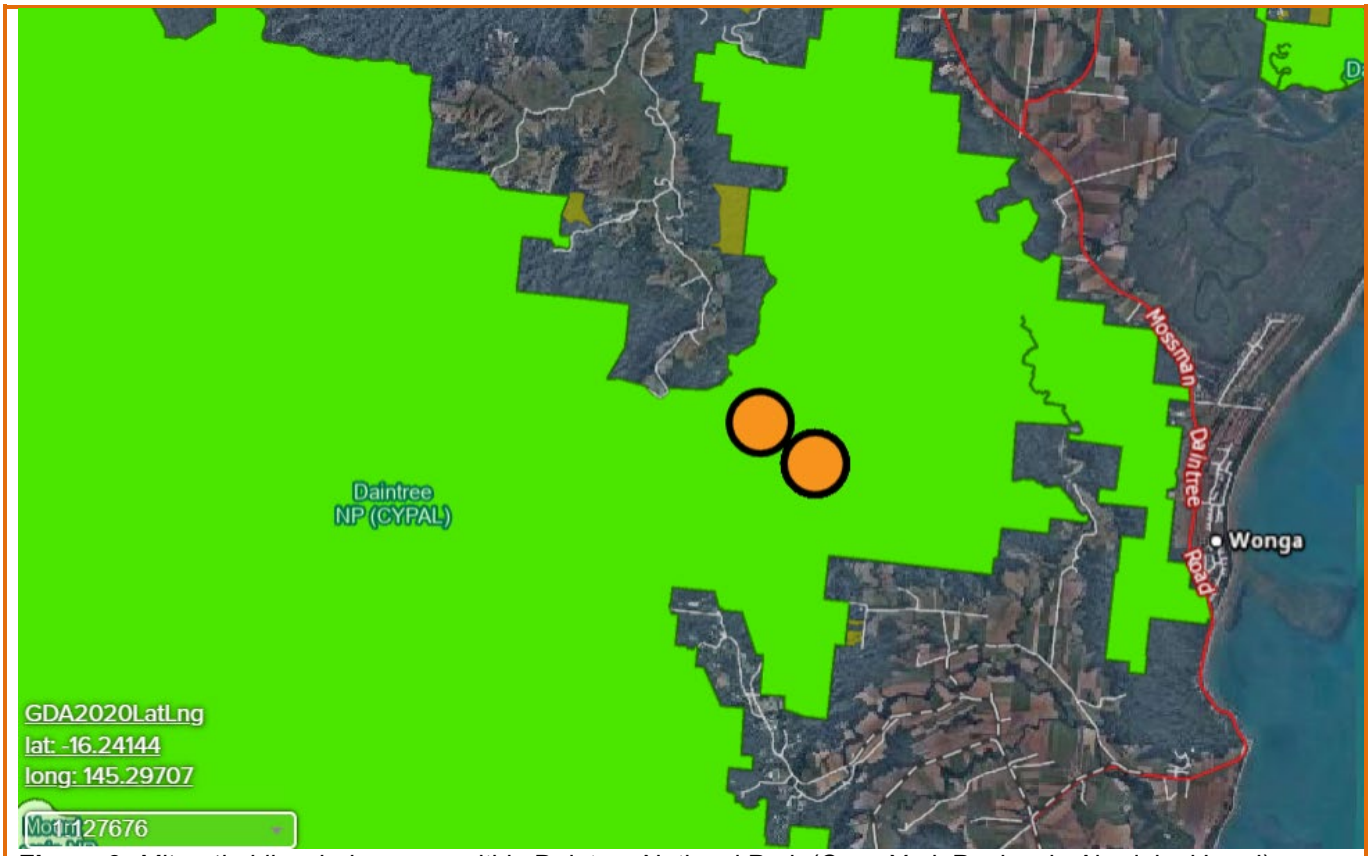

Figure 3. *Mitrantia bilocularis* occurs within Daintree National Park (Cape York Peninsula Aboriginal Land), which is managed for conservation.

BIOLOGY/ECOLOGY

Provide a summary of biological and ecological information.

Include information on:

- life cycle including age at sexual maturity, life expectancy and natural mortality rates
- specific biological characteristics
- the species' habitat requirements
- for fauna: feeding behaviour and food preference and daily/seasonal movement patterns
- for flora: pollination and seed dispersal patterns

Mitrantia bilocularis is known from a disturbed rainforest edge in lowland complex notophyll rainforest at altitudes of 80-250 m above sea level. The species grows on metamorphic plateaus in vegetation mapped as Regional Ecosystem 7.11.1a; *Mesophyll vine forest on lowlands and foothills on metamorphics in very wet rainfall zones* (Queensland Herbarium 2021). This substrate is restricted in the region (A. Ford, pers. comm. 2020). Regional Ecosystem 7.11.1a may be associated with the Lowland Tropical Rainforest, which has recently been listed as Endangered under the *Environment Protection and Biodiversity Act 1999,* however it is not specifically listed within the Conservation Advice (Department of Agriculture, Water and the Environment 2021).

Very little is known of the ecology of *M. bilocularis,* due to its highly restricted occurrence in inaccessible terrain. Recruitment has not been observed in the wild. Anecdotal observations suggest that flowering and subsequent recruitment may occur after significant disturbance when light and nutrients increase in availability (A. Ford, pers. comm. 2019).

Mitrantia bilocularis is a confirmed host to the introduced pathogen myrtle rust (*Austropuccinia psidii*) in both cultivation and wild populations (Pegg et al. 2014; Threatened Species Recovery Hub, unpublished data). No subpopulations of *M. bilocularis* occur outside the distribution of myrtle rust (Kriticos et al. 2013).

Threats

IDENTIFICATION OF KNOWN THREATS AND IMPACT OF THE THREATS

Identify any known threats to the species in the table below. Describe **past, current or future** threats, whether the threats are **actual or potential**, and the **type and level of impact** you believe each threat is having on the species.

Past threats	Impact of threat

Timber harvesting	The single known subpopulation of *M. bilocularis* occurs in a historic logging area and some individuals occur on the edge of logging tracks. Although undocumented, past population declines are likely due to logging and associated activities until the National Park was gazetted, including via direct felling and habitat degradation.
Accidental destruction	Many individuals occur on the edge of a wide track cleared for electricity lines. It is probable that individuals were destroyed during construction of this track. Remnant individuals on the edge of this track are now exposed to edge effects, such as invasive weeds, soil compaction and exposure (T Collingwood, pers.obs. 2019).
Current threats	**Impact of threat**
Introduced pathogens – Myrtle rust	*Mitrantia bilocularis* is susceptible to myrtle rust (*Austropuccinia psidii*) infection (Pegg et al. 2013). Myrtle rust infects growing shoots and reproductive organs of susceptible species, limiting their capacity to grow, reproduce and successfully recruit. Different species have different susceptibilities. Observations of individuals in the wild found that up to 50% of the leaf area was damaged by myrtle rust, with dieback in smaller branchlets (T. Collingwood, pers. obs. 2019). The individuals surveyed occurred on a trackside where edge effects may also be impacting tree health (T. Collingwood, pers. obs. 2019). The species has also been found to be impacted by myrtle rust in a cultivated setting. No subpopulations of *M. bilocularis* occur outside the modelled distribution of myrtle rust (Kriticos et al. 2013).
Invasive weeds	Invasive weeds occur throughout the habitat of *M. bilocularis.* In particular, *Miconia calvescens* can rapidly invade rainforest understorey and form monocultures thereby limiting any opportunity for native seed to germinate and survive due to competition (A. Ford, pers. comm. 2019). *Brillantasia lamium* is another potentially problematic species, although it does not currently occur in the habitat of *M. bilocularis* (A. Ford, pers. comm. 2019).
Vertebrate pests - feral pigs (*Sus scrofa*)	Given the rare and probably sporadic recruitment ecology of *M. bilocularis,* is vulnerable to declines from feral pig disturbance. Given seedlings are likely to germinate sporadically, after ideal weather conditions, they could be damaged by feral pig disturbance, which are problematic throughout the habitat of *M. bilocularis* (A. Ford, pers. comm. 2019).
Future threats – potential	**Impact of threat**
Accidental destruction	Many individuals occur on the edge of a wide track cleared for electricity lines and may be vulnerable to future track maintenance activities.
Small population – stochastic events and genetic effects	Given the very restricted range and small number of mature individuals, *M. bilocularis* is vulnerable to stochastic events (i.e. extreme weather conditions), and genetic/demographic effects.
Climate change	Climate change (higher temperatures and less frequent rainfall) may alter the severity and distribution of myrtle rust throughout the population and habitat of *M. bilocularis.* The anticipated impacts on the species are not yet known.

*CONSERVATION ADVICE: THREAT ABATEMENT AND RECOVERY ACTIONS

Give an overview of recovery and threat abatement/mitigation actions that are underway, have been formally proposed or that you would like to recommend. Address all threats listed or state threats that lack conservation advice.

Past threats	**Abatement or recovery action underway**
Timber harvesting	The population is now protected in Daintree National Park where timber harvesting is precluded.
Accidental destruction	The population is now protected in Daintree National Park and natural regeneration is presumably occurring.
	Abatement or recovery action proposed
Timber harvesting	No further recovery actions required.
Accidental destruction	Incorporate the species into the management plan for the area, so that contractors and others working in the area are aware of the species.

	Undertake comprehensive surveys prior to any infrastructure maintenance to ensure individuals are not incidentally/accidentally killed.
Current threats	**Abatement or recovery action underway**
Introduced pathogens – myrtle rust	Monitoring surveys have been undertaken to assess the health/condition of *M. bilocularis* in the wild. The susceptibility of *M. bilocularis* to myrtle rust infection has been determined from observation of cultivated specimens and confirmed via observations of a sample of wild individuals (T. Collingwood, unpublished data).
Invasive weeds	There is an intensive weed control program for *M. calvescens* throughout the wet tropics region, including the Whyanbeel logging area where *M. bilocularis* occurs.
Vertebrate pests	Feral pig control is widespread over the Wet Tropics region, although the species is notoriously difficult to manage due to their mobility and rapid breeding (Wet Tropics Management Authority 2012). There is a Commonwealth 'Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs', that is relevant to the management of this species (Commonwealth of Australia 2017).
	Abatement or recovery action proposed
Pathogen-induced dieback	More accurately ascertain the susceptibility of the whole population of *M. bilocularis* to myrtle rust infection. Ascertain the impact of myrtle rust of recruitment in the population of *M. bilocularis.* Establish *ex situ* collection of *M. bilocularis* with maximum range of genetic diversity possible. Collect and propagate cuttings from all known wild individuals. Protect *ex situ* collection from myrtle rust infection with fungicide, with view to collect and propagate seed to expand the *ex situ* collection. Determine the presence of individuals that are less susceptible to myrtle rust infection. Conduct further targeted surveys in attempts to locate additional subpopulations. Investigate feasibility of establishing genetically representative translocated subpopulations of *M. bilocularis* in areas outside the climatic envelope of myrtle rust, or to a location where the impacts of myrtle rust are less severe.
Invasive weeds	Undertake research to better understand the impact of *M. calvescens* and other problematic weeds on the recruitment of *M. bilocularis.* Maintain invasive weed control, particularly around the known population of *M. bilocularis* and during periods of recruitment. Implement hygiene protocol to limit introduction of novel weeds to habitat of *M. bilocularis.*
Vertebrate pests	Undertake research to better understand the impact of feral pigs on the recruitment of *M. bilocularis.* Implement feral pig control (trapping/culling), particularly around the population of *M. bilocularis* and during periods of recruitment. Alternatively, exclude feral pigs from areas where recruitment of *M. bilocularis* is likely to occur, if feasible.
Future threats – potential	**Abatement or recovery action underway**
Incidental destruction	The population is now protected in Daintree National Park where timber harvesting is precluded.
Climate change	No recovery actions currently address this threat.
Small population	No recovery actions currently address this threat.
	Abatement or recovery action proposed
Incidental destruction	Ensure future infrastructure maintenance does not negatively impact remnant individuals by engaging with relevant stakeholders; especially park rangers and staff undertaking maintenance activities in the area.

Small population – stochastic events and genetic effects	Conduct further targeted surveys in attempts to locate additional subpopulations. Undertake research to better understand the ecology of the species, with specific focus on limitations to recruitment, habitat requirements and potential impacts of climate change. Engage relevant stakeholders to ensure no further clearing occurs within the vicinity of the population (i.e. for track maintenance) to prevent direct losses and allow habitat recovery. Establish an *ex situ* collection representing the maximum range of genetic diversity possible. Protect individuals from myrtle rust and collect and propagate seed when reproductively mature.
Climate change	Conduct further targeted surveys in attempts to locate additional subpopulations. Undertake research to better understand the ecology of the species, with specific focus on limitations to recruitment, habitat requirements and potential impacts of climate change. Engage relevant stakeholders to ensure no further clearing occurs within the vicinity of the population (i.e. for track maintenance) to prevent direct losses and allow habitat recovery. Establish an *ex situ* collection representing the maximum range of genetic diversity possible. Protect individuals from myrtle rust and collect and propagate seed when reproductively mature.

Listing class/category

CURRENT LISTING CLASS/CATEGORY

[Please mark the boxes that apply by double clicking them with your mouse.]

In what class is the species currently listed under the **NC Act**?

☐Extinct	☐Extinct in the Wild	☐Critically Endangered	☐Endangered
☒Vulnerable	☐Near Threatened	☐Least Concern	☐Not listed

In what category is the species currently listed under the **EPBC Act**?

☐Extinct	☐Extinct in the Wild	☐Critically Endangered	☐Endangered
☐Vulnerable	☐Conservation Dependent		☒Not listed

NOMINATED LISTING CLASS

To what class under the **NC Act** is the species being nominated?

☐Extinct	☐Extinct in the Wild	☒Critically Endangered	☐Endangered
☐Vulnerable	☐Near Threatened	☐Least Concern	☐Not listed

Nominating a species to transfer to another class

REASON FOR A NOMINATION TO TRANSFER TO ANOTHER CLASS

What is the reason for the nomination?

☒Genuine change of status	☐New knowledge	☐Mistake	☐Other
Taxonomic change - ☐'split'	☐newly described	☐'lumped'	☐no longer valid

INITIAL LISTING

Describe the reasons for the species' initial listing under the NC Act and/or the EPBC Act and, if available, the criteria under which it was formerly considered eligible.

The initial nomination information is not available for this species.

CHANGES IN SITUATION LEADING TO THE NOMINATION TO TRANSFER TO ANOTHER CLASS

Please complete (a), (b) OR (c) as appropriate to the nomination.

(a) Critically Endangered, Endangered, Vulnerable or Near Threatened

Describe the change in circumstances that make the species eligible for listing in a class other than Extinct and Extinct in the Wild.

The species now meets the IUCN criteria as Critically Endangered due to the novel and imminent threat of myrtle rust and small population size.

Standard of scientific evidence and adequacy of survey

Please complete as appropriate to the nomination

For this assessment it is considered that the survey of the species has been adequate and there is sufficient scientific evidence to support the listing outcome.

Eligibility against the criteria

CRITERION A

Population size reduction (reduction in total numbers) measured over the longer of 10 years or 3 generations based on any of A1 to A4

	Critically Endangered (CR)	Endangered (EN)	Vulnerable (VU)	Near Threatened (NT)
A1	**≥ 90%**	**≥ 70%**	**≥ 50%**	**≥ 20%**
A2, A3, A4	**≥ 80%**	**≥ 50%**	**≥ 30%**	**≥ 20%**

A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.

A2 Population reduction observed, estimated, inferred or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible.

A3 Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(*a) cannot be used for A3*]

A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.

based on any of (a) to (e)

(a) direct observation [*except A3*]

(b) an index of abundance appropriate to the taxon

(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat

(d) actual or potential levels of exploitation

(e) the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites

Please identify whether the species meets A1, A2, A3 or A4. Include an explanation, supported by data and information, on how the species meets the criterion (A1 – A4). If available include information on:

- whether the population trend is increasing, decreasing or static
- estimated generation length and method used to estimate the generation length

You must provide a response. If there is no evidence to demonstrate a population size reduction, this must be stated.

***Mitrantia bilocularis* is assessed as data deficient under this criterion.**

Population decline relative to generation length is unknown.

It is highly probable that this species will undergo future population declines associated with myrtle rust, although further information is required to determine the proportion of the population that will be impacted.

CRITERION B:

Geographic distribution is precarious for either extent of occurrence AND/OR area of occupancy				
	Critically Endangered (CR)	**Endangered (EN)**	**Vulnerable (VU)**	**Near Threatened (NT)**
B1. Extent of occurrence (EOO)	**< 100 km²**	**< 5,000 km²**	**< 20,000 km²**	**< 40,000 km²**
B2. Area of occupancy (AOO)	**< 10 km²**	**< 500 km²**	**< 2,000 km²**	**< 4,000 km²**
AND at least 2 of the following 3 conditions for CR, EN or VU:				AND (b) for NT
(a) Severely fragmented OR Number of locations	**= 1**	**≤ 5**	**≤ 10**	**Not applicable**
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals				**≥ 10% within the longer of 10 years or 3 generations**
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals				**Not applicable**

Please refer to the 'Guidelines for Using the IUCN Red List Categories and Criteria' for assistance with interpreting the criterion particularly in relation to calculating 'extent of occurrence', 'area of occupancy' and understanding of the definition and use of 'severely fragmented', 'locations', 'continuing decline' and 'extreme fluctuations'.

Please identify whether the species meets B1 or B2. Except for Near Threatened species, include an explanation, supported by data and information, on how the species meets at least 2 of (a), (b) or (c). For Near Threatened species, include an explanation, supported by data and information, on how the species meets (b).

Please note that locations must be defined by a threat. A location is a geographically or ecologically distinct area in which a single threatening event can rapidly affect all individuals of the species present.

If available, include information on:

- Whether there are smaller populations of the species within the total population and, if so, the degree of geographic separation between the smaller populations within the total population
- Any biological, geographic, human induced or other barriers enforcing separation

You must provide a response. If there is no evidence to demonstrate that the geographic distribution is precarious for either extent of occurrence AND/OR area of occupancy, this must be stated.

***Mitrantia bilocularis* is assessed as Critically Endangered under Criterion B1+B2ab(i-v).**

The EOO and AOO of this species are calculated as 4 km^2.

This species occurs at a single location when assessed in relation to the threat of myrtle rust, which encompasses the entire range of the species.

A continuing decline is projected given the confirmed susceptibility of the species to myrtle rust in the wild. Myrtle rust is projected to reduce the AOO, EOO, number of locations/subpopulations and number of mature individuals. The entire range of *M. bilocularis* has been invaded by myrtle rust, corresponding to a decline in the habitat quality for this species.

CRITERION C

Small population size and decline					
		Critically Endangered (CR)	**Endangered (EN)**	**Vulnerable (VU)**	**Near Threatened (NT)**
Estimated number of mature individuals		**< 250**	**< 2,500**	**< 10,000**	**< 20,000**
AND either (C1) or (C2) is true					AND (C1) is true
C1 An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in the future		**25% in 3 years or 1 generation (whichever is longer)**	**20% in 5 years or 2 generations (whichever is longer)**	**10% in 10 years or 3 generations (whichever is longer)**	**10% in 10 years or 3 generations (whichever is longer)**
C2 An observed, estimated, projected or inferred continuing decline AND its geographic distribution is precarious for its survival based on at least 1 of (a) or (b):					
(a)	(i) Number of mature individuals in each subpopulation	**≤ 50**	**≤ 250**	**≤ 1,000**	**Not applicable**
	OR				
	(ii) % of mature individuals in one subpopulation =	**90 – 100%**	**95 – 100%**	**100%**	**Not applicable**
(b) Extreme fluctuations in the number of mature individuals		**Applicable**	**Applicable**	**Applicable**	**Not applicable**

Please identify the estimated total number of mature individuals and either an answer to C1 or C2. Include an explanation, supported by data and information, on how the species meets the criteria. Note: If the estimated total number of mature individuals is unknown but presumed to be likely to be >10 000, you are not required to provide evidence in support of C1 or C2, just state that the number is likely to be >10 000.

You must provide a response. If there is no evidence to demonstrate small population size and decline this must be stated.

***Mitrantia bilocularis* meets the thresholds for listing as Critically Endangered under Criterion C2a(i,ii).** The species probably meets the thresholds for the Critically Endangered category, although further survey is required to substantiate this.

There are probably <50 mature individuals, but the population is conservatively estimated as consisting of <250 mature individuals. It is highly unlikely that any subpopulation, known or otherwise, exceeds 50 mature individuals (A. Ford, pers. comm. 2019). The eligibility assessment under Criteria C has been made on the precautionary estimate of 50 mature individuals.

A continuing population decline for *M. bilocularis* has been inferred (past) and projected (future) based on the number of threats to the species. This decline is projected to continue into the future.

Given only 1 subpopulation has been recorded, 100% of mature individuals occur within a single subpopulation.

The species is a long-lived tree and therefore does not undergo extreme fluctuations.

CRITERION D:

Very small population				
	Critically Endangered (CR)	Endangered (EN)	Vulnerable (VU)	Near Threatened (NT)
D1. Number of mature individuals	< 50	< 250	D1. < 1,000	D1. < 3,000
OR				
D2. [Only applies to the VU and NT categories] Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time.	Not applicable	Not applicable	D2. Typically: AOO < 20 km^2 or number of locations ≤ 5	D2. Typically: AOO < 40 km^2 or number of locations ≤ 10

Please identify the estimated total number of mature individuals and evidence of how the figure was derived.

For Criterion D2, please provide information on the species' area of occupancy, number of locations and plausible threats.

You must provide a response. If there is no evidence to demonstrate eligibility, this must be stated.

***Mitrantia bilocularis* meets the thresholds for listing as Critically Endangered category under Criterion D.**

There are probably <50 mature individuals, but the population is conservatively estimated as consisting of <250 mature individuals. It is highly unlikely that any subpopulation, known or otherwise, exceeds 50 mature individuals (A. Ford, pers. comm. 2019). The eligibility assessment under Criteria C has been made on the precautionary estimate of 50 mature individuals.

CRITERION E:

Quantitative Analysis				
	Critically Endangered (CR)	Endangered (EN)	Vulnerable (VU)	Near Threatened (NT)
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)	≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)	≥ 10% within 100 years	≥ 5% within 100 years

Please identify the probability of extinction and evidence of how the analysis was undertaken.

You must provide a response. If there has been no quantitative analysis undertaken this must be stated.

***Mitrantia bilocularis* is data deficient under Criterion E.**

Quantitative analysis has not been undertaken.

SUMMARY OF CRITERIA UNDER WHICH THE SPECIES IS ELIGIBLE FOR LISTING AS: CR, EN, V, NT, EW or EX

Please mark the criteria and sub-criteria that apply.

☒Criterion A **Data Deficient**	☐A1 (specify at least one of the following) ☐a) ☐b) ☐c) ☐ d) ☐e); **AND/OR** ☐A2 (specify at least one of the following) ☐a) ☐b) ☐c) ☐d) ☐e); **AND/OR** ☐A3 (specify at least one of the following) ☐a) ☐b) ☐c) ☐d) ☐e); **AND/OR** ☐A4 (specify at least one of the following) ☐a) ☐b) ☐c) ☐d) ☐e)
☒Criterion B **Critically Endangered**	☒B1 (specify at least two of the following) ☒a) ☒b) ☐c); **AND/OR** ☒B2 (specify at least two of the following, other than NT) ☒a) ☒b) ☐c)

☒Criterion C **Critically Endangered**	☐estimated number of mature individuals **AND** ☐C1 **OR** ☒C2 ☒a (i) **OR** ☒a (ii) **OR** ☐C2 ☐b)
☒Criterion D **Critically Endangered**	☒D **OR** ☐ D1 **OR** ☐ D2
☐Criterion E **Data Deficient**	
☐EX	
☐EW	
☐LC	Species nominated to change from a higher conservation class to Least Concern. No above boxes apply.

Other Considerations

*INDIGENOUS CULTURAL SIGNIFICANCE

Is the species known to have cultural significance for Indigenous groups within Australia? If so, to which groups? Provide information on the nature of this significance if publicly available.

The cultural, customary and spiritual significance of species and the ecological communities they form are diverse and varied for Indigenous Australians and their stewardship of Country. This section describes some examples of this significance but is not intended to be comprehensive or applicable to, or speak for, Indigenous Australians. Such knowledge may be held by Indigenous Australians who are the custodians of this knowledge and have the rights to decide how this knowledge is shared and used.

Mitrantia bilocularis is known from occurrences on the lands of the Kuku Yalanji People (whilst acknowledging that other peoples may have a connection to the Country). There is little published information on how the Kuku Yalanji People relate to Country in this region and what that may mean for the cultural significance of *M. bilocularis*.

FURTHER STUDIES

Identify relevant studies or management documentation that might relate to the species (e.g. research projects, national park management plans, recovery plans, conservation plans, threat abatement plans, etc.).

Commonwealth of Australia (2017). *Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (Sus scrofa).* Commonwealth of Australia.

Makinson, R. O. (2018). *Myrtle rust in Australia: a draft action plan.* Presented at the Plant Biosecurity Cooperative Research Centre's National Science Exchange, Melbourne.

Makinson, R. O. (2018). *Myrtle rust reviewed: the impacts of the invasive plant pathogen Austropuccinia psidii on the Australian environment.* Plant Biosecurity Cooperative Research Centre, Canberra.

ADDITIONAL COMMENTS/INFORMATION

Please include any additional comments or information on the species such as survey or monitoring information, and maps that would assist with the consideration of the nomination.

Click or tap here to enter text.

IMAGES OF THE SPECIES

Please include or attach images of the species if available, and indicate if you are in a position to authorise their use.

Click or tap here to enter text.

Reviewers and references

REVIEWER(S)

Has this nomination been peer-reviewed? Have relevant experts been consulted on this nomination? If so, please include their names, current professional positions and contact details.

Andrew Ford, Botanist, CSIRO, Atherton.
Rigel Jensen, Botanist, Australian Wildlife Conservancy.

REFERENCE LIST

Please list key references/documentation you have referred to in your nomination.

Department of the Environment (2012). *Interim biogeographic regionalisation for Australia (regions – states and territories) v. 7 (IBRA).* Commonwealth of Australia. Canberra. Available at https://www.environment.gov.au/land/nrs/science/ibra#ibra.

Department of Agriculture, Water and the Environment (2021). *Approved conservation advice for the Lowland tropical rainforest of the Wet Tropics.* Australian Government. Available at: https://www.environment.gov.au/biodiversity/threatened/communities/pubs/170-conservation-advice.pdf#:~:text=The%20Lowland%20tropical%20rainforest%20of%20the%20Wet%20Tropics,Act%201999%28Cwlth%29%28EPBC%20Act%29%20effective%20from%2026%20November%202021.

IUCN Standards and Petitions Committee (2019). Guidelines for Using the IUCN Red List Categories and Criteria. Version 14. Prepared by the Standards and Petitions Committee. http://www.iucnredlist.org/documents/RedListGuidelines.pdf.

Kriticos, D. J., Morin, L., Leriche, A., Anderson, R. C., and Caley, P. (2013). Combining a climatic niche model of an invasive fungus with its host species distributions to identify risks to natural assets: *Puccinia psidii* Sensu Lato in Australia. *PLOS ONE,* **8**(5), e64479.

Pegg, G. S., Giblin, F. R., McTaggart, A. R., Guymer, G. P., Taylor, H., Ireland, K. B., Shivas, R. G., and Perry, S. (2013). *Puccinia psidii* in Queensland, Australia: disease symptoms, distribution and impact. *Plant Pathology,* 1-17.

Queensland Herbarium (2020) Herbarium records for *Mitrantia bilocularis*, Department of Environment and Science, Queensland, viewed 1 February 2020.

Queensland Herbarium (2021) Regional Ecosystem Description Database (REDD). Version 12.1 (December 2021) (DES: Brisbane).

Wet Tropics Management Authority (2012). *Feral animal control.* Wet Tropics Management Authority, available at https://www.wettropics.gov.au/feral-animal-control, accessed 19 December 2019.

Wilson, P. G., and Hyland, B. P. M. (1988). New taxa of rainforest Myrtaceae from northern Queensland. *Telopea* ***3****(2),* 257-271.

Nominator's Details

Note: Your details are subject to the provisions of the *Privacy Act 1988* and will not be divulged to third parties, except for state and territory governments and scientific committees that have agreed to collaborate on national threatened species assessments using a CAM. If there are multiple nominators please include details below for all nominators.

TITLE (e.g. Mr/Mrs/Dr/Professor/etc.)

Ms

FULL NAME

Teghan D. Collingwood

ORGANISATION OR COMPANY NAME (IF APPLICABLE)

School of Biological Sciences, The University of Queensland.
Queensland Herbarium, Department of Environment and Science.

CONTACT DETAILS

DECLARATION

I declare that, to the best of my knowledge, the information in this nomination and its attachments is true and correct.

Signed: Click here to enter text. * *If submitting by email, please attach an electronic signature*	Date: 10/03/2020

Lodging your nomination

Completed nominations may be lodged either:
1. by email in Microsoft Word format to: SpeciesTechnical.Committee@des.qld.gov.au
2. by mail to: The Chair
Species Technical Committee
Queensland Herbarium
Mount Coot-tha Rd
Toowong QLD 4066

*** If submitting by mail, you must include an electronic copy on a memory stick.**

Suggested citation:

Collingwood, T. D. (2020). Nomination to change the conservation class of *Mitrantia bilocularis* under the Queensland Nature Conservation Act 1992.