

THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

The Minister approved this conservation advice and included this species in the Vulnerable category, effective from 11/05/2018.

Conservation Advice

Banksia catoglypta

Summary of assessment

Conservation status

Banksia catoglypta has been found to be eligible for listing in the Vulnerable category, as outlined in the attached assessment.

Reason for conservation assessment by the Threatened Species Scientific Committee

This advice follows assessment of information provided by Western Australia as part of the Common Assessment Method process, to systematically review species that are inconsistently listed under the EPBC Act and relevant state/territory legislation or lists.

More information on the Common Assessment Method is available at:

<http://www.environment.gov.au/biodiversity/threatened/cam>

The information in this assessment has been compiled by the relevant state/territory government. In adopting this assessment under the EPBC Act, this document forms the Approved Conservation Advice for this species as required under s266B of the EPBC Act.

Public consultation

Notice of the proposed amendment and a consultation document was made available for public comment for 33 business days between 3 October 2017 and 16 November 2017. Any comments received that were relevant to the survival of the species were considered by the Committee as part of the assessment process.

Recovery plan

A recovery plan for this species under the EPBC Act is not recommended, because the Approved Conservation Advice provides sufficient direction to implement priority actions and mitigate against key threats. The relevant state/territory may decide to develop a plan under its equivalent legislation.

Recommendations

- (i) The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **including** in the list in the Vulnerable category:

Banksia catoglypta

- (ii) The Committee recommends that there not be a recovery plan for this species.

Threatened Species Scientific Committee

28 February 2018

Nomination summary *(to be completed by nominator)*

Current conservation status				
Scientific name:	<i>Banksia catoglypta</i>			
Common name:				
Family name:	Proteaceae	Fauna <input type="checkbox"/>	Flora <input checked="" type="checkbox"/>	
Nomination for:	Listing <input checked="" type="checkbox"/>	Change of status <input type="checkbox"/>	Delisting <input type="checkbox"/>	
1. Is the species currently on any conservation list, either in a State or Territory, Australia or Internationally? 2. Is it present in an Australian jurisdiction, but not listed?		Provide details of the occurrence and listing status for each jurisdiction in the following table		
Jurisdiction	State / Territory in which the species occurs	Date listed or assessed (or N/A)	Listing category i.e. critically endangered or 'none'	Listing criteria i.e. B1ab(iii)+2ab(iii)
International (IUCN Red List)				
National (EPBC Act)				
State / Territory	1. WA	2010	Vulnerable	D1 + D2
		5/4/2017	Vulnerable	D1
	2.			
Consistent with Schedule 1, item 2.7 (h) and 2.8 of the Common Assessment Method Memorandum of Understanding, it is confirmed that:				
<ul style="list-style-type: none"> this assessment meets the standard of evidence required by the Common Assessment Method to document the eligibility of the species under the IUCN criteria; 			Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comments:				
<ul style="list-style-type: none"> surveys of the species were adequate to inform the assessment; 			Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comments:	The species and landform on which it occurs are distinctive, and in an area that has been intensively surveyed.			
<ul style="list-style-type: none"> the conclusion of the assessment remains current and that any further information that may have become available since the assessment was completed supports or is consistent with the conclusion of the assessment. 			Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comments:	A further occurrence has been found since the 2010 assessment, but does not change the status of the species. There has been no evidence of decline, and hence criterion D2 does not apply. Confirmation of the second subpopulation required before further assessment can occur.			
Nominated national conservation status: category and criteria				
Presumed extinct (EX) <input type="checkbox"/>	Critically endangered (CR) <input type="checkbox"/>	Endangered (EN) <input type="checkbox"/>	Vulnerable (VU) <input checked="" type="checkbox"/>	

None (least concern) <input type="checkbox"/>		Data Deficient <input type="checkbox"/>		Conservation Dependent <input type="checkbox"/>	
What are the IUCN Red List criteria that support the recommended conservation status category?		D1			
Eligibility against the IUCN Red List criteria (A, B, C, D and E)					
<i>Provide justification for the nominated conservation status; is the species eligible or ineligible for listing against the five criteria. For delisting, provide details for why the species no longer meets the requirements of the current conservation status.</i>					
A.	Population size reduction (evidence of decline)	<ul style="list-style-type: none"> No population reduction observed Does not meet criteria 			
B.	Geographic range (EOO and AOO, number of locations and evidence of decline)	<ul style="list-style-type: none"> EOO 8.85km² and AOO 8km². 2 locations and not severely fragmented No observed decline in EOO, AOO, extent or quality of habitat or number of mature individuals Does not meet criteria 			
C.	Small population size and decline (population size, distribution and evidence of decline)	<ul style="list-style-type: none"> Population 913 mature individuals No observed, estimated or projected decline in number of mature individuals Does not meet criteria 			
D.	Very small or restricted population (population size)	<ul style="list-style-type: none"> 913 mature individuals Meets criterion for Vulnerable D1 			
E.	Quantitative analysis (statistical probability of extinction)	<ul style="list-style-type: none"> No data to assess 			
Summary of assessment information					
EOO	8.85km ² (minimum convex polygon)	AOO	8km ² (2x2km grid method)	Generation length	Unknown
No. locations	2	Severely fragmented	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/>		
No. subpopulations	2	No. mature individuals	913		
Percentage global population within Australia			100		
Percentage population decline over 10 years or 3 generations			unknown		
Threats (detail how the species is being impacted)					
Threat <i>(describe the threat and how it impacts on the species. Specify if the threat is past, current or</i>		Extent <i>(give details of impact on whole species or specific</i>		Impact <i>(what is the level of threat to the conservation of the</i>	

<i>potential)</i>	<i>subpopulations)</i>	<i>species)</i>
Fire. As both subpopulations are located in remnants surrounded by agriculture land, there is a high risk that each subpopulation could be destroyed by a single fire event. As it is a banksia, regeneration from the existing seed bank is likely to occur following a fire, but then the seedlings will be prone to grazing from rabbits, and susceptible to further fire events.	Whole species	Potentially severe
Grazing. Grazing of regenerating plants by rabbits will impact the species. Stock grazing may be an issue for subpopulation 2.	Whole species	Potentially severe in association with fire
Clearing. This is not a current threat to the main population, but could be with a change in land ownership. The risk for subpopulation 2 is unknown although a wind farm is proposed for the site.	Whole species	Moderate
Weeds. The private property remnant is in excellent condition and weeds are of low risk while fire is excluded. Subpopulation 2 is being impacted by weeds emanating from surrounding cleared agricultural land.	Subpopulation 2	Moderate
Management and Recovery		
Is there a Recovery Plan (RP) or Conservation Management Plan operational for the species?		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<p><i>List all relevant recovery or management plans (including draft, in-preparation, out-of-date, national and State/Territory recovery plans, recovery plans for other species or ecological communities, or other management plans that may benefit or be relevant to the nominated species).</i></p> <ul style="list-style-type: none"> • There has been Biodiversity Management Guidelines written for the private property remnant. 		
<p><i>List current management or research actions, if any, that are being undertaken that benefit the conservation of the species.</i></p> <ul style="list-style-type: none"> • Monitoring and surveys have been carried out at subpopulation 1 to determine plant numbers and impact of threats; • The subpopulation 1 remnant is fenced and being managed for conservation; • The subpopulation 1 remnant is being protected from fire. 		
<p><i>List further recommended management or research actions, if any, that would benefit the conservation of the species.</i></p> <p>Management</p> <ul style="list-style-type: none"> • Ongoing monitoring and observations of subpopulations and threats, especially at subpopulation 2; • Undertake surveys in areas of potentially suitable habitat; • Prepare a fire management plan for both locations and implement to reduce risk from fire; • Monitor weed occurrence and assess risk at subpopulation 2, and manage as necessary; • Control rabbits, especially after fire; 		

- Ensure remnants are fenced and stock exclusion maintained;
- Protect remnants under a nature conservation covenant;
- Collect and store seeds to guard against the extinction of natural populations. Collections should aim to sample and preserve the maximum range of genetic diversity possible;
- Develop and implement dieback hygiene measures;
- Develop a translocation proposal and select a disease free translocation site;
- Ensure the establishment of the proposed wind farm at subpopulation 2 does not impact the remnant containing the species.

Research

- Research biology and ecology of the species, with a focus on pollination effectiveness, seed viability, conditions required for natural germination, response to threats (particularly dieback disease) and disturbances and reproductive biology.

Nomination prepared by:

Contact details:

Date submitted:

16/12/2016

If the nomination has been refereed or reviewed by experts, please provide their names and contact details:

Summary of subpopulation information (detailed information to be provided in the relevant sections of the form)						
Location (include coordinates)	Land tenure	Survey information: Date of survey and No. mature individuals	Area subpopulation	Site / habitat Condition	Threats (note if past, present or future)	Specific management actions
Badgingarra	Private	25/3/2008: 912	34 ha	Excellent	Past Clearing Present Fire Grazing Future Clearing, Fire Weeds Grazing	<ul style="list-style-type: none"> • Fence remnant to exclude stock • Protect from fire • Manage grazing by rabbits • Control weeds • Prevent clearing of the remnant vegetation • Provide formal security of tenure
Warradarge	Private	26/10/2011: 1	-	Unknown	Past Clearing Present Fire Weeds Grazing Future Clearing, Fire Weeds Grazing	<ul style="list-style-type: none"> • Fence remnant to exclude stock • Protect from fire • Manage grazing by rabbits • Control weeds • Prevent clearing of the remnant vegetation • Provide formal security of tenure





Department of
Parks and Wildlife



Form to nominate a Western Australian species for listing as threatened, change of category or delisting.

2010, updated 2016

To fill out this form you **must** refer to the Guidelines. Incomplete forms may result in delays in assessment, or rejection of the nomination.

Answer all relevant sections, filling in the white boxes and indicating when there is no information available. To mark boxes with a cross ☒: on the **View** menu, point to **Toolbars**, and then click **Forms**. Click **Protect Form** , then check the box. Unlock the form by clicking  and you will then be able to type text in the white table cells.

Note, this application form applies to both flora and fauna species, and hence some questions or options may not be applicable to the nominated species – for these questions, type “N/A”.

SECTION 1. NOMINATION	
1.1. Nomination information	
Flora <input checked="" type="checkbox"/>	Fauna <input type="checkbox"/> Nomination for: Addition <input checked="" type="checkbox"/> Change of category <input type="checkbox"/> Delisting <input type="checkbox"/>
1.2. Scientific Name This name will be used to identify the species on all official documentation. Use the approved name used by the Western Australian Museum or Herbarium. If this is not possible, use unpublished names or numbers of voucher specimens.	
<i>Banksia catoglypta</i>	
1.3. Common Name If the species has a generally accepted common name, please show it here. This name will be used on all official documentation.	
None	
1.4. Current Conservation Status. If none, type 'None'.	
International IUCN Red List Category and Criteria applicable to the highest rank category only e.g. Vulnerable (B1ab(iv);D(1))	None
National EPBC Act 1999 Category	None
State of WA Wildlife Conservation Notice Schedule	Schedule 3
State of WA IUCN Category	Vulnerable
State of WA Priority	
Is the species listed as 'Threatened' in any other Australian State or Territory? If Yes, list these States and/or Territories and the status for each.	
No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>	

Does the species have specific protection (e.g. listed on an annex or appendix) under any other legislation, inter-governmental or international arrangements e.g. CITES? If Yes, please provide details.	
No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>	
1.5. Nominated Conservation Status. Type one category for each of the fields. If none, write 'None'.	
International IUCN Red List Category and Criteria applicable to the highest rank category only e.g. Vulnerable (B1ab(iv);D(1))	
National EPBC Act 1999	Vulnerable
State of WA Wildlife Conservation Notice Schedule	
State of WA IUCN Category	
State of WA Priority	
1.6. Reasons for the Nomination. Briefly summarise the reasons for the nomination in dot points. Please include details relevant to the IUCN Categories and Criteria where appropriate.	
<p><i>Banksia catoglypta</i> was first collected in July 1980 by D. Lievense in the 'Gairdner Range'. No precise information was provided. The type collection was made by Margaret Pieroni in July 1993 on a large patch of remnant vegetation on private property and described by Alex George in 1996. All further collections have been from this single remnant, situated north of Badgingarra. The Gairdner Range extends through Lesueur National Park, but this species has never been confirmed in the national park.</p> <p>It is unknown if <i>Banksia catoglypta</i> had populations in bushland within the adjoining area, as the current location is positioned in an area of agriculture land that was encouraged to be cleared many years ago.</p> <p>In 2011, a single specimen was recorded from private property 20km NE of the known location. The exact location of this record is unknown.</p> <p><i>Banksia catoglypta</i> is a species that is easy to identify outside of its flowering period, and many search efforts have been conducted without success. Plants in the single confirmed population of this species are locally common, but restricted in distribution.</p> <p>(WAHerb, 2009) (Cavanagh & Pieroni, 2006)</p>	

SECTION 2. SPECIES

2.1. Taxonomy.

Describe the taxonomic history, using references, and describe the key distinguishing features that can be used to separate this taxon from closely related taxa. Include details of the type specimen, changes in taxonomy, scientific names and common names used for the species.

Banksia catoglypta was previously named *Dryandra catoglypta*. It is closely related to *B. drummondii* and especially *B. octotriginta*. *B. catoglypta* differs from *B. octotriginta* by having prominent, usually recurved bracts on the stem, a short petiole, a longer perianth, longer narrower pollen presenter and more flowers per head. These two species display their flowers more prominently along upright stems, rather than as a 'mound' of flowers around the base of the leaves like *B. drummondii*. The seed is offset to one side in *B. catoglypta* and *B. octotriginta*, but in *B. drummondii* it is at the base of the wing.

(Cavanagh & Pieroni, 2006)

Is this species conventionally accepted? If no, explain why. For example, is there any controversy about the taxonomy? For undescribed species, detail the location of voucher specimens (these should be numbered and held in a recognised institution and be available for reference purposes).

No Yes

Describe any known hybridisation with other species in the wild, indicating where this occurs and how frequently.

No hybridisation has been recorded for this species. The form is consistent across its range.

(Cavanagh & Pieroni, 2006)

2.2. Description

Describe the physical appearance, habit, behaviour/dispersion and life history. Include anatomy or habit (e.g. size and/or weight, sex and age variation, social structure) and dispersion (e.g. solitary, clumped or flocks etc), and life history (eg short lived, long lived, geophytic, etc).

Banksia catoglypta is a shrub to 1 m tall and 1 m wide, without a lignotuber. The stems have broadly ovate-oblong prophylls at the base of an annual increment, tomentose outside, glabrous inside and usually recurved. The leaves are blue-green, pinnatisect; lamina 15-30 cm long and 2.5-7 cm wide. There are 10-15 lobes on each side, which are triangular, acute, pungent, at 80° - 90°, the upper margin ± straight to gently curved, the lower more convex; under side pale green with shallow, indistinct pits, margins flat; petiole 1.5-1.8 cm long.

The flower heads are golden yellow, 7-8 cm across, terminal on short branchlets, with several linear, leaf-like bracts around involucre, flowers 85-110 per head. The involucre bracts are broadly ovate-oblong, silky-villous, to 25 mm long. The perianth is 44-56 mm long, villous with pale hairs becoming silky towards the limb; limb very narrow, 12-15 mm long, appressed-silky with pale hairs and a terminal, rusty-red fruit. The pistil is 46-64 mm long, bowed, glabrous; pollen presenter narrow, ribbed, 8-9 mm long, dull reddish-pink. Follicles glabrescent, striate, shining, loosely attached. Seeds are two per capsule, enclosed within a papery separator.

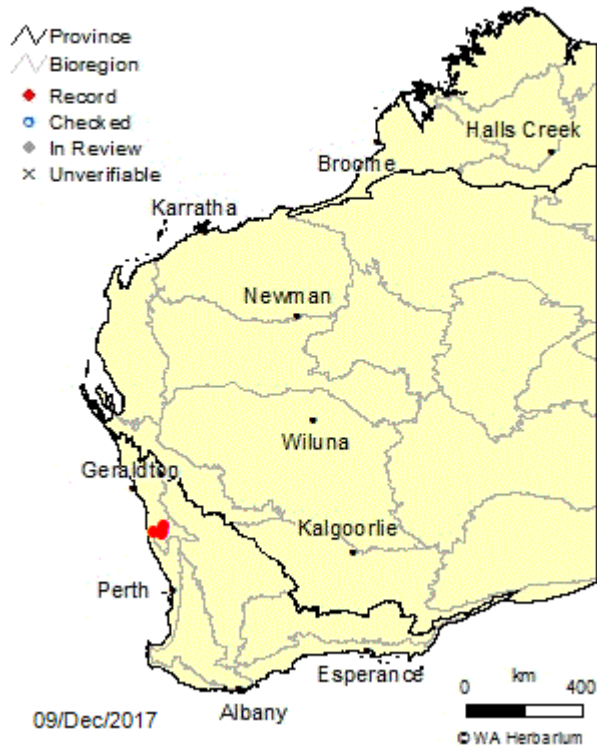
(Cavanagh & Pieroni, 2006)

2.3. Distribution

Describe the distribution of the species in Australia and, if possible, provide a map.

Banksia catoglypta is endemic to Western Australia, occurring in the South West Botanical Province. The only known population is located in the Northern Agricultural NRM Region and falls in the Geraldton Sandplain IBRA Region. A town near the population includes Badgingarra.

Banksia catoglypta



Banksia catoglypta location (from Western Australian Herbarium (1998--)).

2.4. Habitat

Describe the non-biological habitat (e.g. aspect, topography, substrate, climate) and biological habitat (e.g. forest type, associated species, sympatric species). If the species occurs in various habitats (e.g. for different activities such as breeding, feeding, roosting, dispersing, basking etc) then describe each habitat.

Non-biological habitat

Banksia catoglypta grows in white sand over gravel in close proximity to, or on top of, laterite breakaways. The only known location has an annual average rainfall of 500-600 mm per year; mean maximum temperature of 25-27°C, mean minimum temperature of 13-14°C, with around 100 days per year above 30°C.

Biological habitat

Banksia catoglypta is found in kwongan heath. Associated species that are common across the range of distribution include *Banksia candolleana*, *B. lanata*, *B. sessilis*, *B. kippistiana*, *Petrophile nivea*, and *Leptospermum erubescens*.

(WAHerb, 2009)

Does the (fauna) species use refuge habitat e.g. in times of fire, drought or flood? Describe this habitat.

N/A
Is the species part of, or does it rely on, a listed threatened ecological community? Is it associated with any other listed threatened species?
<i>Banksia catoglypta</i> is not part of, or reliant on a listed threatened ecological community.
2.5. Reproduction Provide an overview of the breeding system. For fauna : Provide an overview of the breeding system and breeding success, including: when does it breed; what conditions are needed for breeding; are there any breeding behaviours that may make it vulnerable to a threatening process? For flora : When does the species flower and set fruit? Is the seed produced viable? What conditions are needed for this? What is the pollinating mechanism? If the species is capable of vegetative reproduction, a description of how this occurs, the conditions needed and when. Does the species require a disturbance regime (e.g. fire, ground disturbance) in order to reproduce?
<i>Banksia catoglypta</i> flowers from June to July. Reproduction is from seed which is produced after flowering and remains on the stem for many years.
2.6. Population dynamics Provide details on ages of sexual maturity, extent of breeding success, life expectancy and natural mortality. Describe population structure (presence of juveniles/seedlings, mature and senescing individuals).
Little is known about the age dynamics of the population, but there is evidence of senescence, mature individuals and seedlings within the population.
Questions 2.7 and 2.8 apply to <u>fauna</u> nominations only
2.7. Feeding Summarise food items or sources and timing/availability.
N/A
Briefly describe feeding behaviours, including those that may make the species vulnerable to a threatening processes.
N/A
2.8. Movements Describe any relevant daily or seasonal pattern of movement for the species, including relevant arrival/departure dates if migratory. Provide details of home range/territories.
N/A
SECTION 3. INTERNATIONAL CONTEXT
For species that are distributed both in <u>Australia</u> and in other countries.
3.1. Distribution Describe the global distribution.
N/A
Provide an overview of the global population size, trends, threats and security of the species outside of Australia.
N/A
Explain the relationship between the Australian population and the global population. What percentage of the global population occurs in Australia? Is the Australian population distinct, geographically separate or does part, or all, of the population move in/out of Australia's jurisdiction? Do global threats affect the Australian population?

N/A					
SECTION 4. CONSERVATION STATUS AND MANAGEMENT					
4.1. Population					
What is the total population size in terms of number of mature individuals? Has there been any known reduction in the size of the population, or is this likely in the future? – provide details. Are there other useful measures of population size and what are they? Or if these are unavailable, provide an estimate of abundance (e.g. scarce, locally abundant etc).					
The total size of <i>Banksia catoglypta</i> is 913 individuals. This figure has been calculated from recent population counts from survey's conducted in 2008 by DPAW staff of the known location (912 plants) plus the addition record from 2011. There has been no reduction in population size.					
Provide locations of: captive/propagated occurrences or <i>ex situ</i> collections; recent re-introductions to the wild; and sites for proposed re-introductions. Have these sites been identified in recovery plans?					
Collections of seed have been made from the single population of <i>Banksia catoglypta</i> by staff from DPAW's Threatened Flora Seed Centre. From a single collection from the population, 1602 seeds were gathered with 1459 held in storage. Seeds have been put aside for germination trials but the test has not been complete. (Pers Com: Anne Cochrane, 2009)					
How many locations do you consider the species occurs in and why? Where a species is affected by more than one threatening event, location should be defined by considering the most serious plausible threat.					
<i>Banksia catoglypta</i> is known from two locations. It was first recorded from the 'Gairdner Range', but this is a very broad area in which the current location is inclusive. They are considered to be the same location. The second location discovered in 2011 has not been rediscovered.					
For <u>flora</u>, and where applicable, for <u>fauna</u>, detail the location, land tenure, estimated number of individuals, area of occupancy, and condition of site for each known location or occurrence.					
Location	Land status	Date of most recent survey	Number of individuals at location	Area of occupancy at location	Condition of site
1. SE of Warradarge	Private	25/3/2008	912	34 ha	Healthy
2. Warradarge	Private	26/10/2011	1	-	Unknown
Has the number of individuals been counted, or is this an estimate? Provide details of the method of determining the number of individuals.					
The individuals within the current boundary of the confirmed population have been counted, but there maybe an extension of the population if other areas of the remnant are surveyed.					
Has there been any known reduction in the number of locations, or is this likely in the future? – provide details.					
There has been no reduction in the known locations of <i>Banksia catoglypta</i> . With recent surveys the known population boundary of <i>Banksia catoglypta</i> has been extended, and a new location discovered.					

<p>What is the extent of occurrence (in km²) for the species; explain how it was calculated and datasets used. If an accurate estimate is unavailable, provide a range of values or a minimum or maximum area estimate. Include estimates of past, current and possible future extent of occurrence. If available, include data that indicates the percentage decline over 10 years or 3 generations (whichever is longer) that has occurred or is predicted to occur.</p>
<p>The area of the subpopulation of <i>Banksia catoglypta</i> is estimated at 0.34km². This figure was calculated using population boundary and individual location data collected in the field with a hand held GPS and data extrapolated from field notes and ‘mud maps’ using the program ArcGIS9. These calculations are regarded as an overestimate. (DEC, 2008)</p> <p>The AOO using the 2x2km grid method is estimated to be 8km² including the second location. The EOO using minimum convex polygon is calculated as 8.85km².</p>
<p>Is the distribution of the species severely fragmented? Why?</p>
<p><i>Banksia catoglypta</i> is known from two subpopulations. The main population appears to be continuous.</p>
<p>Identify important occurrences necessary for the long-term survival and recovery of the species? This may include: key breeding populations, those near the edge of the range of the species or those needed to maintain genetic diversity.</p>
<p>As there is only two known subpopulations of <i>Banksia catoglypta</i>, both may be extremely important for the long-term survival of this species, but the status of the second subpopulation needs to be confirmed.</p>
<p>4.2. Survey effort Describe the methods to conduct surveys. For example, (e.g. season, time of day, weather conditions); length, intensity and pattern of search effort (including where species not encountered); any limitations and expert requirements.</p>
<p>Consultation with consultant botanists who have conducted many surveys in the area, indicate that surveys, general and specific for <i>Banksia catoglypta</i>, have been conducted at varying times of the year and with varying intensities. Some surveys have been conducted opportunistically whilst conducting works on other species and others have been conducted in a more structured manner. Survey work has involved both desktop and field based assessments of potential habitat and likely areas of occurrence.</p>
<p>Provide details on the distinctiveness and detectability of the species, or the distinctiveness of its habitat, that would assist survey success.</p>
<p><i>Banksia catoglypta</i> is considered to be a distinctive species and is easily identifiable in the field due to its shape, colour and size of the leaves. Flowering is not considered essential for the detection of the species.</p> <p>The habitat in which <i>Banksia catoglypta</i> is found is also considered to be reasonably distinctive. Topography offers great assistance in the identification of suitable habitat with the only known population occurring high in the landscapes, predominately on and near ridge tops.</p>

Has the species been reasonably well surveyed? Provide an overview of surveys to date (include surveys of known occurrences and surveys for additional occurrences) and the likelihood of its current known distribution and/or population size being its actual distribution and/or population size. Include comments on potential habitat and surveys that were conducted, but where the species was not present/found.

Banksia catoglypta was first recorded in July 1980 by D. Lievense who collected it from the 'Gairdner Range'. The coordinates for this collection puts it in Lesueur National Park. This population has never been found and it is thought that the location details are incorrect.

Banksia catoglypta was described by Alex George in 1996 based on a collection made in 1993 by Margaret Pieroni from a large remnant on private property. This is the location of the only known population. The owners of the property are avid and knowledgeable botanists with a keen interest in the high diversity of flora that exists on their remnant and in the surrounding landscape. They provide flora tours on their property and in nearby National Parks, Nature Reserves and UCL. Over the past 10 years they have spent many hours covering vast areas of Lesueur National Park, Coomaloo Nature Reserve, Alexander Morrison National Park and Big Soak Plains, looking for *Banksia catoglypta* but have been unsuccessful. A number of these surveys have been accompanied by Margaret Pieroni an accepted Dryandra specialist.

In the two years prior to its listing in 2010, specific surveys had been conducted in habitat that is thought suitable for *Banksia catoglypta*. These include:

- Traversing the length of Marchagee Track on foot from the Brand Highway to Coolara Road.
- Total of 30-40hrs searching along the Coolara Road, from the Marchagee Track south to the Brand Highway east.
- Several hours searching in the Cowalla locality on all sandy gravelly ridges, whilst conducting surveys for a proposed wind farm.
- Area of bushland at the corner of Marchagee Track and Mazza Road.
- Bushland part of the Heschell Range, north of Marchagee Track. Opposite McKays Road.
- 10hrs combined search in bushland at the corner of Marchagee Track and Dewar Rd.
- Two people in October 2008 searched for 3-4hrs, covering an area of 8km in a large patch of remnant bushland south of the Marchagee Track and just west of Watheroo National Park.
- In September 2008 a group of 6 people searched for two hours in a transect formation in a large patch of remnant bushland south of the Marchagee Track and just west of Watheroo National Park, taking a SE to NW alignment through the centre.

(Pers. Com: Don Williams, 2009)

In 2011, a survey was undertaken on private property, Warradarge, for a proposed wind farm. The survey identified a specimen of, however, due to an error in processing the voucher specimen there is uncertainty surrounding the accuracy of the collection location.

The habitat in which is found is considered to be reasonably distinctive. Topography offers great assistance in the identification of suitable habitat with the only known population in 2010 occurring high in the landscapes, predominantly on and near ridge tops. This information has been used when conducting searches for this species.

4.3. Threats

Identify past, current and future threats indicating whether they are actual or potential. For each threat describe:

- how and where they impact this species
- what the effect of the threat(s) has been so far (indicate whether it is known or suspected)
- present supporting information/research
- does it only affect certain populations?
- what is its expected effect in the future (is there supporting research/information; is the threat only suspected; does it only affect certain populations?).

As there is only a single known population of *Banksia catoglypta* and it is located on a long unburnt remnant surrounded by agriculture land, there is a high risk that the entire population could be destroyed by a single fire event. As it is a banksia, regeneration from the existing seed bank is likely to occur following a fire, but then the seedlings are prone to grazing from rabbits.

Without any recruitment to the population through fire control efforts, the population could senesce and reduce in size.

If possible, provide information threats for each occurrence/location:

Location	Past threats	Current threats	Potential threats	Management requirements (see section 4.4)
Subpopulation 1 Badgingarra <i>Private property</i>	Clearing	Fire Grazing	Clearing, Fire Grazing Weeds	Potential threats may occur with changes in land manager and other unforeseen events.
Subpopulation 2 Warradarge <i>Private property</i>	Clearing	Fire Weeds Grazing	Clearing, Fire Grazing Weeds	Proposal to construct a wind farm may result in localised clearing. A survey for this species is required to ensure infrastructure does not impact the subpopulation.

Identify and explain why additional biological characteristics particular to the species are threatening to its survival (e.g. low genetic diversity). Identify and explain any models addressing the survival of the species.

N/A

4.4. Management

Identify key management documentation for the species e.g. recovery plans, conservation plans, threat abatement plans etc.

There has been Biodiversity Management Guidelines written for the remnant containing Subpopulation 1, but this is a broad document, with the aim of managing the remnant as a whole. No specific management documentation has been prepared for *Banksia catoglypta*.

Does this species benefit from the management of another species or community? Explain.

The main subpopulation of *Banksia catoglypta* occurs on a private remnant that contains other Threatened and Priority species. This subpopulation will benefit from the ongoing management of the associated species of DRF. The survey which identified the second subpopulation also identified a number of Threatened and Priority species.

How well is the species represented in conservation reserves or covenanted land? Which of these are actively managed for this species? Provide details.

The only known subpopulations of <i>Banksia catoglypta</i> occur on private remnants that have no covenant over them.	
Are there any management or research recommendations that will assist in the conservation of the species? Provide details.	
As fire is the main threat for this species, it would be beneficial to determine the response of fire and the impacts it would have on recruitment.	
4.5. Other	
Is there any additional information that is relevant to consideration of the conservation status of this species?	
SECTION 5. NOMINATOR	
Nominator(s) name(s)	
Organisation(s)	
Address(s)	
Telephone number(s)	
Email(s)	
Date	Submitted 16/12/2016
If the nomination has been refereed or reviewed by experts, provide their names and contact details.	
SECTION 6. REFERENCES	
What references or sources did you use to prepare your nomination? Include written material, electronic sources and verbal information. Include full references, address of web pages and the names and contact details of authorities with whom you had verbal communications.	
<p>Cavanagh, T & Pieroni, M (2006). The Dryandras, Australian Plants Society (SGAP Victoria) Inc and Wildflower Society of Western Australia Inc.</p> <p>DEC (2009) Records held in Department of Environment and Conservation's Threatened Flora Database and associated files. WA Department of Environment and Conservation.</p> <p>Personal Communication, Don Williams (private property owner)</p> <p>Personal Communication, Anne Cochrane (DPAW, Threatened Flora Seed Centre)</p> <p>Western Australian Herbarium (1998–) <i>FloraBase—the Western Australian Flora</i>. Department of Environment and Conservation. http://florabase.dpaw.wa.gov.au.</p>	