

THREATENED SPECIES SCIENTIFIC COMMITTEE

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

This draft Conservation Advice was prepared by the Department for Environment and Water in South Australia.

Conservation Advice

Spyridium fontis-woodii

Woods Well Spyridium

Taxonomy

Conventionally accepted as *Spyridium fontis-woodii* Kellermann & W.R.Barker.

Summary of assessment

Conservation status

Critically Endangered, Criteria B1ab(i,ii,iii,v)+2ab(i,ii,iii,v); C1+2a(i,ii); D

Species can be listed as threatened under state and territory legislation. For information on the listing status of this species under relevant state or territory legislation, see <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.

Reason for conservation assessment by the Threatened Species Scientific Committee

This advice follows assessment of information submitted by the Department for Environment and Water, South Australia.

Species information

Description

Spyridium fontis-woodii (Woods Well Spyridium) is a slender shrub to 1.8 m high with bilobed obovate, obcordate and at times cuneate leaves (Kellermann & Barker 2012). Its white, funnel-shaped flowers are approximately 3 mm long and occur in dense clusters (SA Seed Conservation Centre 2018) (see Appendix 1).

Spyridium fontis-woodii is closely related to *S. furculentum* (Forked Spyridium) and *S. halmaturinum* (Kangaroo Island Spyridium), sharing a similar upper leaf surface indumentum, free stipules and glabrous fruit. It also shares coarse stalked stellate hairs with both species, but the hairs are not as evenly distributed, and include mostly simple and bifid hairs on the upper surface. It differs from *S. furculentum* in leaf shape (obovate vs. Y-shaped). Its leaf shape most closely resembles that of *S. coactilifolium* (Butterfly Spyridium), however the leaves are much smaller (Kellermann & Barker 2012).

Although other *Spyridium* species occur in the vicinity and broader region, none of these other species have obovate leaves. The species is distinctive, and cannot be confused with any other species in the area (T. Croft, pers. obs. Apr. 2018).

Distribution

Spyridium fontis-woodii is endemic to South Australia (SA), and is only known from the Woods Well vicinity, east of the Coorong in south-east SA. Past distribution of the species is unknown. The immediate area where *S. fontis-woodii* occurs has been extensively cleared for agriculture, primarily improved pasture for grazing of domestic stock. In the Tintinara IBRA Subregion (Interim Biogeographic Regionalisation for Australia Version 7.0) in which this species occurs,

it is estimated that 19% of native vegetation cover remains, with 63% of this remaining native vegetation protected in reserves (Enviro Data SA 2018). This historic vegetation clearance has likely impacted on the population size and distribution of *S. fontis-woodii*.

The species' current known distribution is restricted to a single population on a narrow strip of roadside, which was previously reported as spanning 1.3 km (Electronic Flora of South Australia 2007), and is now confined to a section of no more than 100 m (D. Duval pers. comm. 2018) (see Appendix 1). Despite the species' taxonomic and conservation significance having been known since the early 1980s, searches for further populations in the district have been unsuccessful (Kellermann & Barker 2012). Examination of recent aerial photography of the area indicates the immediate area has been extensively cleared of native vegetation, with only small islands of remnant vegetation remaining (Enviro Data SA 2018). These very small areas are likely unfenced and open to grazing by domestic stock. They are also prone to weed invasion of pasture grasses and herbs. Although these areas and other remnant native vegetation should be surveyed, it is considered unlikely the species would have persisted under grazing and invasion by exotic plants (T. Croft, pers. comm. 2018). While potential habitat in the local region is limited and searches to date have failed to locate any additional populations, it is possible that some additional plants may exist in remnants such as Messent Conservation Park and an adjacent property owned by a school (D. Duval pers. comm. 2018).

A small number of plants have been planted at the school property, with more plantings planned for 2020 (D. Duval pers. comm. 2019), but these populations are not yet self-sustaining.

Cultural significance

Not known.

Relevant biology/ecology

Little is known specifically about the life cycle of *Spyridium fontis-woodii*. Other *Spyridium* species have been observed to mature in two to four years (Coates 1996). Some *Spyridium* species may live for several generations (Coates 1996), while others tend to senesce after 10 to 15 years (D. Duval pers. comm. 2018).

As with other *Spyridium* species, regeneration appears to occur from soil-stored seed that requires some form of disturbance to induce germination (Coates 1991). The single known population of *Spyridium fontis-woodii* is on a road cutting, and is an even-aged population that appears to have regenerated following a disturbance event (D. Duval pers. comm. 2018).

Seed of *S. fontis-woodii* is known to have morphophysiological dormancy that needs to be overcome for the seed to germinate (SA Seed Conservation Centre 2018). This physical dormancy is due to water being prevented from penetrating the embryo through an impermeable seed coat. The dormancy can be broken by scarification, heat, weathering or insect damage over time (Baskin et al 2000; Baskin & Baskin 2004). In germination trials, the SA Seed Conservation Centre treated the seed with wet heat (95°C for 30 seconds) in spring to break the dormancy, achieving 70% germination. Due to lack of seed, no untreated seed were germinated as a control. The SA Seed Conservation Centre advise breaking the physical dormancy through seed treatment with hot water prior to using for revegetation.

Based on studies of other *Spyridium* species, pollination is likely by insects, with poor seed dispersal, assisted to some degree by ants (Carter & Downe 2006; Threatened Species Section 2011).

Habitat: *Spyridium fontis-woodii* occurs as an understorey shrub in *Eucalyptus diversifolia* subsp. *diversifolia* (Coastal White Mallee) mallee over a diverse understorey on sandy loam over calcrete. The mallee appears as older regrowth one or two decades old, resulting from past

disturbance. In searches of mallee habitat that appeared older, *S. fontis-woodii* was absent (T. Croft, pers. obs. Apr. 2018).

Response to fire: No studies have been undertaken on the response of *S. fontis-woodii* to fire, however the physical dormancy of its seed, and the successful germination trials at 95°C, suggest that fire may stimulate regeneration. Fire also has the potential to kill individual plants (Coates 1996). It is likely that the frequency of fires in its habitat has reduced over time, due to the historic clearance of remnant vegetation, and a change in the district's fire regime to one of fire exclusion.

Threats

Known and potential threats to *Spyridium fontis-woodii* are summarised in the table below:

Threat	Extent	Impact
Clearance of native vegetation (<i>past, potential</i>) The immediate area where <i>S. fontis-woodii</i> occurs has been extensively cleared for agriculture, primarily improved pasture for grazing of domestic stock. This has likely impacted on the population size and distribution. The small population size and area leaves the species highly vulnerable to catastrophic events including inadvertent clearance of the roadside vegetation for roadworks.	Entire population	High
Lack of stimulation for new plant regeneration (<i>potential</i>) The seed of this species, as with other <i>Spyridium</i> , has physical dormancy, requiring breakdown of its impermeable coat (Coates 1991, SA Seed Conservation Centre 2018). Gaps in vegetation also appear to help stimulate regeneration of many <i>Spyridium</i> species, and it is possible that a gradual thickening of the vegetation post-disturbance has contributed to the observed decline in the existing <i>S. fontis-woodii</i> population (D. Duval pers. comm. 2018). The existing population appears in an area that has been previously disturbed, and appears to be of even age, with no regeneration observed (T. Croft, pers. obs. Apr. 2018). There is a risk that the population will senesce and fail to regenerate in the absence of carefully managed disturbance.	Entire population	High
Changed fire frequency (<i>past, current, potential</i>) Fire in the landscape may have historically provided a disturbance regime to promote regeneration and maintenance of <i>S. fontis-woodii</i> populations. The original mallee vegetation of the region has been converted primarily to introduced grassland, and remnants of native vegetation are few and scattered, and often confined to roadsides. Furthermore, the district's fire regime has changed to one of fire exclusion. Lack of disturbance, such as by fire, may inhibit germination of new plants. However, fires that are too frequent could kill plants before a build-up of soil seed source can occur, and fires that are too hot could destroy soil-stored seed.	Entire population	High

<p>Road use and maintenance (<i>current, potential</i>)</p> <p>The road adjacent to the <i>S. fontis-woodii</i> population has been upgraded to a high-speed bitumen surface in the last few decades. While this has reduced dust, it has required continual grading of the road edge and encroachment into remnant vegetation to make the road safe.</p> <p>Events such as inadvertent clearance of the roadside vegetation for roadworks would be catastrophic for this species.</p>	Entire population	High
<p>Browsing by hares (<i>Lepus europaeus</i>) and/or rabbits (<i>Oryctolagus cuniculus</i>) (<i>current, potential</i>)</p> <p>In a recent survey, all observed <i>S. fontis-woodii</i> plants were growing up through other plants, suggesting this species may be impacted by browsing (T. Croft, pers. obs. Apr. 2018). Rabbit buck heaps have been observed in the vicinity of <i>S. fontis-woodii</i> on the road reserve, along with the sighting of a hare. The adjacent property also has a maintained rabbit-proof mesh fence, implying that rabbits are a problem in the area (T. Croft, pers. obs. Apr. 2018). Grazing of new seedlings by hares/rabbits may be deleterious to the survival of an already very small population. It is unknown whether kangaroos (<i>Macropus</i> spp.) browse on seedlings of this species.</p>	Entire population	High
<p>Invasive introduced plants (<i>current, potential</i>)</p> <p>Bridal Creeper (<i>Asparagus asparagoides</i> f. <i>asparagoides</i>) has been noted as present at the <i>S. fontis-woodii</i> site, but only occupies a small area (T. Croft, pers. obs. Apr. 2018). In other areas of roadside in the region, it has been noted to form a very dense cover during its growth season, smothering other vegetation for several months of the year, until it dies back. Any adjacent paddocks are used for grazing by domestic stock only and not cropping, hence crop plants are not regarded as a threat.</p> <p>Perennial Veldt Grass (<i>Ehrharta calycina</i>) is established in the immediate vicinity of <i>S. fontis-woodii</i>. As observed elsewhere in the district, the perennial grass has high potential to dominate the groundcover in disturbed sites, to the exclusion of native vegetation. This will likely deter germination of new <i>Spyridium</i> plants, important for the survival of the species.</p>	Entire population	High
<p>Introduced (non-local) woody plants (<i>current, potential</i>)</p> <p>Non-local <i>Eucalyptus</i> spp. have been planted into the <i>S. fontis-woodii</i> site, but currently do not seem to be spreading through establishment of seedlings or suckers (T. Croft, pers. obs. Apr. 2018).</p> <p><i>Acacia saligna</i> (Golden Wreath Wattle), a native to Western Australia, has spread along disturbed roadsides in south-east SA and elsewhere, including the site of <i>S. fontis-woodii</i>. It has been noted as suckering (T. Croft, pers. obs. Apr. 2018). If left uncontrolled, this non-local species is highly likely to increase in numbers, changing the composition of vegetation in the area.</p>	Entire population	Medium
<p>Low genetic diversity (<i>potential</i>)</p> <p>The very small population size of <i>S. fontis-woodii</i> places the population at risk of declining genetic diversity. Low genetic variability may increase the species' susceptibility to environmental changes or climatic events. Low genetic diversity could also lead to inbreeding, which may affect the vigour and reproductive potential of newly recruited plants.</p>	Entire population	Medium
<p>Other threats (<i>potential</i>)</p> <p>Due to the very restricted size of the population, it could be severely impacted by any other activities that may occur at the site, including agricultural operations such as new fencing, and illegal rubbish dumping.</p>	Entire population	Medium

How judged by the Committee in relation to the EPBC Act criteria and regulations

Criterion A. Population size reduction (reduction in total numbers)			
Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4			
	Critically Endangered Very severe reduction	Endangered Severe reduction	Vulnerable Substantial reduction
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3, A4	≥ 80%	≥ 50%	≥ 30%
<p>A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.</p> <p>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.</p> <p>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]</p> <p>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.</p> <p>based on any of the following:</p> <ul style="list-style-type: none"> (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, hybridization, pathogens, pollutants, competitors or parasites 			

Evidence:

The generation length of *Spyridium fontis-woodii* is unknown; based on estimates for other *Spyridium* species, it is possibly in the range of 10 to 30 years. The historic distribution and population size are also unknown.

Population estimates at the only known site were reasonably consistent between 1995 and 2012, with around 35 plants observed, but the most recent population counts of 12-13 plants indicate a decline of over 60% within the past decade (Appendix 2). The causes of the decline are not well understood, and may include a lack of disturbance to promote regeneration, and/or browsing by herbivores. A continuing decline can be projected based on the range of current and potential threats, and the extremely small size of the population.

Based on the information above, this species meets the requirements for listing as Endangered under Criterion A.

Relevant criteria: EN A2a

Criterion B. Geographic distribution as indicators for either extent of occurrence AND/OR area of occupancy			
	Critically Endangered Very restricted	Endangered Restricted	Vulnerable Limited
B1. Extent of occurrence (EOO)	< 100 km ²	< 5,000 km ²	< 20,000 km ²
B2. Area of occupancy (AOO)	< 10 km ²	< 500 km ²	< 2,000 km ²
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(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			
(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			

Evidence:

Spyridium fontis-woodii has a highly restricted geographic range. The current Area of Occupancy (AOO) is estimated to be 4 km², as determined by application of 2 x 2 km grid cells (IUCN 2017). Using the minimum convex polygon method (IUCN 2017), the current Extent of Occurrence (EOO) is calculated to be less than the scaled AOO, and has therefore been adjusted to equal the AOO (4 km²), as outlined in the IUCN (2017) Guidelines. This meets the thresholds for Critically Endangered under B1 and B2.

Despite targeted searches to locate further populations of this species, it is currently known only from one location: a single roadside population, where there are a number of serious plausible threats (see Threats table) that could rapidly affect all individuals of the species. The number of individuals within this population, and the habitat patch in which it occurs, are extremely small, with a risk of low genetic diversity, leading to the potential for inbreeding and reduced plant fitness. The distribution of this species is therefore considered to meet the IUCN (2017) definition of "severely fragmented", as well as being confined to one location (sub-criterion a).

In recent years, a decline has been observed in the number of mature individuals from approximately 35 plants in 2013, to 13 plants in 2018 (Appendix 2); this is possibly due to senescence of individuals and increasing density of the vegetation, with a lack of disturbance to stimulate regeneration. Based on the number of current and potential threats that could impact *S. fontis-woodii*, the extremely small size of the population and its restricted area, a continuing decline is projected in extent, area, habitat quality and number of mature individuals. The observed and ongoing pressure of introduced plants; potential threats of roadworks, illegal rubbish dumping, and grazing by introduced herbivores; as well as the likely pressure of low genetic diversity; provide a sound case for projected continuing decline in the number of individuals, distribution and habitat quality. Without targeted management and control of threats, the population may senesce and become extinct in the wild (T. Croft, pers. obs. Apr. 2018). The species therefore meets sub-criterion b(i,ii,iii,v).

There is no evidence that any extreme fluctuations are occurring; therefore, the species does not qualify under sub-criterion c.

Based on the information above, this species meets the requirements for listing as Critically Endangered under Criterion B.

Relevant criteria: CR B1ab(i,ii,iii,v)+2ab(i,ii,iii,v)

Criterion C. Population size and decline			
	Critically Endangered Very low	Endangered Low	Vulnerable Limited
Estimated number of mature individuals	< 250	< 2,500	< 10,000
AND either (C1) or (C2) is true			
C1 An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future)	Very high rate 25% in 3 years or 1 generation (whichever is longer)	High rate 20% in 5 years or 2 generations (whichever is longer)	Substantial rate 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 the following 3 conditions:			
(i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
(a) (ii) % of mature individuals in one subpopulation =	90 – 100%	95 – 100%	100%
(b) Extreme fluctuations in the number of mature individuals			

Evidence:

Kellermann and Barker (2012) estimated the population of *S. fontis-woodii* to be well over 20 plants but most likely less than 50 plants, and the most recent survey in 2018 recorded only 13 plants (D. Duval pers. obs. 2018). This meets the threshold for Critically Endangered under C (<250 mature individuals).

As discussed under Criterion A, there has been an observed decline of over 60% since 2013, i.e. within a single generation, at the only known population. A continuing decline is projected due to current and potential threats including the observed, ongoing and/or potential pressure of introduced plants, inadvertent clearance from roadworks, illegal rubbish dumping, grazing by introduced herbivores and low genetic diversity. The total known population of less than 50 mature individuals is all within one subpopulation. This species therefore meets Criteria CR C1 and CR C2a (i) and (ii).

There is no evidence of extreme fluctuations occurring; therefore, the species does not qualify under sub-criterion b.

Based on the information above, this species meets the requirements for listing as Critically Endangered under Criterion C.

Relevant criteria: CR C1+2a(i,ii)

Criterion D. Number of mature individuals			
	Critically Endangered Extremely low	Endangered Very Low	Vulnerable Low (Medium-term future) ¹
Number of mature individuals	< 50	< 250	< 1,000
D2 ¹ Only applies to the Vulnerable category Restricted area of occupancy or number of locations with a plausible future threat that could drive the species to critically endangered or Extinct in a very short time	-	-	D2. Typically: area of occupancy < 20 km ² or number of locations ≤ 5

¹ The IUCN Red List Criterion D allows for species to be listed as Vulnerable under Criterion D2. The corresponding Criterion D in the EPBC Regulations does not currently include the provision for listing a species under D2. As such, a species cannot currently be listed under the EPBC Act under Criterion D2 only. However, assessments that demonstrate eligibility for listing under other criteria may include information relevant to D2. This information will not be considered by the Committee in making its assessment of the species' eligibility for listing under the EPBC Act, but may assist other jurisdictions to adopt the assessment outcome under the [common assessment method](#).

Evidence:

Kellermann and Barker (2012) estimated the population of *S. fontis-woodii* to be most likely less than 50 plants, and the most recent survey, in 2018, recorded 13 plants (D. Duval pers. obs. 2018). This meets the threshold for Critically Endangered under D (< 50 mature individuals).

As noted under Criterion B, the species has an estimated AOO of 4 km² and occurs in one location, with plausible future threats that could feasibly drive the species to Extinct in a very short time. Therefore, the species also meets the threshold for Vulnerable under D2.

Based on the information above, this species meets the requirements for listing as Critically Endangered under Criterion D.

Relevant criteria: CR D

Criterion E. Quantitative Analysis			
	Critically Endangered Immediate future	Endangered Near future	Vulnerable Medium-term future
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% in 100 years

Evidence:

No quantitative analysis has been undertaken for this species.

There are insufficient quantitative data available to assess the species against this criterion.

Adequacy of survey information and other evidence:

Existing survey information and other evidence is considered adequate to inform the assessment.

Despite the species' taxonomic and conservation significance having been known since the early 1980s, searches for further populations in the district have been unsuccessful, and the species is considered likely to be confined to one population (Kellermann & Barker 2012). Some adjacent private land has been systematically surveyed for the species, and the immediate area

has been extensively cleared of native vegetation, with only small islands of native vegetation remaining (Enviro Data SA 2018) within grazed paddocks. It is considered unlikely the species would have persisted under grazing and invasion by exotic plants (T. Croft, pers. comm. 2018). Further work to map and thoroughly search potential habitat is being undertaken by the SA Seed Conservation Centre in partnership with a school (D. Duval pers. comm. 2019), and to date no additional populations have been located.

The population has been surveyed on at least six occasions between 1995 and 2018, generating estimates of total population numbers, and documentation of current and potential threats.

Summary of the reasons why the species qualifies for listing in the assigned category:

Spyridium fontis-woodii qualifies for listing in the category of Critically Endangered due to it being restricted to a single population (one location) with an extremely small area (<100m stretch of roadside); an extremely small population size (13 mature individuals at last count); and an observed decline (35 to 13 individuals in 5 years) that is projected to continue without active intervention, given its current and future threats.

Conservation actions

Recovery plan

There are no current recovery or management plans relating to this species.

Current management or research actions

Seed of *S. fontis-woodii* was collected from the population in 2006 and 2013, and has been stored at the Millennium Seed Bank in England, and the Botanic Gardens of South Australia (SA Seed Conservation Centre), respectively. Viability tests indicated that 74% of seed collected in 2013 was viable prior to storage (SA Seed Conservation Centre, 2016). The SA Seed Conservation Centre has propagated a number of plants, and is working with a school that has a property close to the existing population, on mapping and searches of potential habitat, and plant propagation, with the aim of establishing further populations in the local area. The school is also establishing a seed orchard in Adelaide (D. Duval pers. comm. 2019).

Primary conservation actions

The following management actions are recommended:

Stakeholder engagement

- Raise awareness of this species among relevant government agencies and conservation groups, to encourage prioritisation for conservation action, funding, survey and monitoring.
- Ensure that the Coorong District Council (as managers of the roadside) and the adjacent landowners are made aware of the species' significance, location, threats and recommended management actions, for consideration in planning and on ground works. Determine whether there is any knowledge of the fire history at the site.

Conservation and management priorities

- Place Significant Roadside Vegetation markers and signage at the site of the population, and manage accordingly.
- Establish additional populations in suitable secure habitat, and collect further seed (within sustainable limits) for safeguard storage and further propagation.
- Control hares and rabbits in the surrounding area, in partnership with local landholders.
- Monitor the existing surviving plants and assess threats to determine whether targeted protection (eg caging or small-scale fencing coupled with regular weeding) would be beneficial to support survival and recruitment.
- Manage the extant roadside site to remove introduced eucalypts, Golden Wreath Wattle, Bridal Creeper, Perennial Veldt Grass and any other weeds that appear to be current or potential threats to *S. fontis-woodii*.

Survey and monitoring priorities

- Conduct searches in suitable habitat on private and public land in the local area (including pre and post-fire monitoring), to ascertain whether any further populations exist, and identify any habitat that may be suitable for translocation. If further populations are discovered, discuss management requirements with land managers, and consider funding or incentives to support targeted management actions where required.

- Commence long term monitoring of the known population, to assess population trends, the relative impacts of current and potential threats, and the impact of management interventions.

Information and research priorities

- Conduct small-scale disturbance trials (e.g. scraping, scratching, gap creation and burning) to better understand the stimulus for regeneration. These trials could be conducted in sections of existing habitat if new populations are found; in ex situ populations; and/or potentially in small sections of the existing roadside population where individuals were previously observed but no longer occur.
- Conduct genetic studies to inform future translocation and population supplementation strategies.
- Evaluate the success of the various management interventions, and identify further management and/or research requirements.
- Investigate seedbank dynamics including seed longevity and dispersal.

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 Critically Endangered category:
- Spyridium fontis-woodii*

Threatened Species Scientific Committee

Date

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Personal Communications cited in the advice

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- Duval, D. (2018) Personal communication via telephone. 10 Oct. 2018. SA Seed Conservation Centre.
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APPENDICES

Appendix 1



Images: *Spyridium fontis-woodii* and its habitat

(Source: Seeds of South Australia website http://saseedbank.com.au/species_information)

Appendix 2

A record of surveys undertaken at the single known population for *Spyridium fontis-woodii*

(Source: Census of SA Plants, Algae and Fungi website: <http://www.flora.sa.gov.au/census.shtml>; Seeds of South Australia website: http://www.saseedbank.com.au/species_information; T. Te, pers. comm. Apr 2018; J. Kellermann, pers. comm. Sept 2018; T. Croft, pers. comm. Sept 2018, D. Duval pers. comm. Oct 2018).

Summary of survey information:		
Location	Land tenure	Survey information: collector, date and no. mature individuals/details
Woods Well	Roadside	<p>C. Woolcock, 1983, Collected by roadside.</p> <p>W. Barker, Oct 1995, On north side of road. Searched for extensively from Woods Well. ~30 plants counted over a 300 m stretch of roadside, and no seedlings or first year plants were observed.</p> <p>H. Vonow and D.Duval, Jan 2006, North side of road. Seeds collected from 30+ plants over 1.3km. Specimens collected from 6 plants. At least 50 plants were observed (D. Duval, pers.comm. December 2019).</p> <p>J. Kellermann Dec 2007. The roadside population was observed extending a little way into the adjacent paddock. Population not counted (J. Kellermann, pers. comm. Sept 2018).</p> <p>SA Seed Conservation Centre, Jan 2013, Seeds collected from 10 plants, from a population of about 35 plants (T. Te, pers. comm. Apr 2018).</p> <p>T. Croft, Apr 2018, 12 plants found, all on roadside. Population appeared to be even-aged, with no regeneration visible. All observed plants were growing up through other shrubs. No plants observed in adjacent paddock. (T. Croft, pers. comm. Sept 2018).</p> <p>D. Duval, Oct 2018, 13 plants found along a stretch of roadside no more than 100 m long. 1 plant senescing. Observed that vegetation cover has become thicker over time. Seeds collected from 6-7 plants (D. Duval, pers.comm. October 2018).</p>