



Ramsar Information Sheet

Published on 22 June 2026

Update version, previously published on : 9 August 2018

Australia

Ginini Flats Subalpine Bog Complex



Designation date	1 March 1996
Site number	793
Coordinates	35°31'29"S 148°46'53"E
Area	350,00 ha

Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a ‘full’ Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

1 - Summary

Summary
Ginini Flats Subalpine Bog Complex Ramsar Site is a remarkable bog assemblage located on Ngunnawal Country in Namadgi National Park, Australian Capital Territory (ACT), Australia. The ACT region is the ancestral homeland of the Ngunnawal people. As Traditional Custodians of this land, the Ngunnawal people have used the area for tens of thousands of years and continue to feel a deep responsibility to preserve the spirit and stories of their ancestors throughout this landscape. The site is made up of 4 main areas of significant difference. This includes Ginini West, Ginini East, Morass Flats which is flattish and very treed, and the Cheyenne Flats area which is quite steep and linear. The area consists of a composite of subalpine Sphagnum bogs and associated wet heath and wet grassland habitats occupying a series of interconnected wetlands. Ginini Flats meets Ramsar listing criteria 1, 2, 3, 4 and 9: 1: The site is located at the northern extreme of the climatic range for Sphagnum bog wetlands in the Australian Alps. 2: The site provides habitat for threatened species listed nationally (under the EPBC Act) and/ or internationally (under the IUCN Redlist). The Ginini Flats Subalpine Bog Complex is part of a threatened ecological community which is listed as endangered both nationally (Alpine Sphagnum Bogs and Associated Fens) and locally (High Country Bogs and Associated Fens). Sphagnum bog ecosystem make up a tiny proportion of the Australian mainland. 3: The site is important for maintaining the genetic and ecological diversity for species restricted to subalpine bog ecosystems. 4: The site provides breeding habitat for threatened species, including the northern corroboree frog and Riek’s crayfish. 9: The site supports more than 1% of the wild population of the northern corroboree frog. The Ginini Flats Subalpine Bog Complex is the only major Sphagnum bog in the ACT that did not burn in the 2020 Orroral fire, which makes it a very important refuge for many species. Some species present in Ginini Flats Subalpine Bog Complex had more than 80% of their known habitat in the ACT impacted by the fires, including Mueller’s snow-gentian (<i>Gentianella muelleriana</i> subsp. <i>Jingerensis</i>) and the charming leek orchid (<i>Prasophyllum venustum</i>).

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Responsible compiler

Institution/agency	Australian Capital Territory Government - Environment, Planning and Sustainable Development Directorate
Postal address	GPO Box 158, Canberra ACT 2601

National Ramsar Administrative Authority

Institution/agency	Department of Climate Change, Energy, the Environment and Water (DCCEEW)
Postal address	GPO Box 3090 Canberra ACT 2601 Australia

2.1.2 - Period of collection of data and information used to compile the RIS

From year	1996
To year	2024

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Ginini Flats Subalpine Bog Complex
Unofficial name (optional)	Ginini Flats Wetland Complex

2.1.4 - Changes to the boundaries and area of the Site since its designation or earlier update

(Update) A. Changes to Site boundary	Yes ☐ No ☒
(Update) B. Changes to Site area	No change to area
(Update) For secretariat only: This update is an extension	☐

2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS?	No
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2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image
<1 file(s) uploaded>

Former maps	0
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Boundaries description

The boundary description is unchanged:
The boundary commences at point A (35° 32' 01.69"S, 148° 46' 35.55"E) on the map, lying 10 m east of the eastern road edge of Mt Franklin Road.

From point A it follows Mt Franklin road maintaining its position 10 m east from the eastern road edge, heading in a north easterly, then north westerly direction (circumventing Mt Ginini, which lies to the west) to ACT border at point B (at the point nearest to 35° 31' 17.91"S, 148° 46' 04.85"E).

From point B the boundary heads in a northerly direction along the border of ACT, to the most north westerly point of the site, still on ACT border, at point C (at the point nearest to 35° 30' 54.21"S, 148° 46' 0.99"E).

From there the boundary heads in an easterly direction from ACT border and runs 10 m inside (below and to the south of) the catchment ridgeline through point D (35° 30' 57.66"S, 148° 46'46.16E), where it crosses Ginini Creek, to point E (35° 31' 03.277"S, 148° 47'19.39"E).

From point E the boundary heads in a generally southerly direction, paralleling (and 10 m below and to the west of) the ridgeline to point F.

Between points E and G the ridgeline boundary changes from Ginini Flats ridgeline to Cheyenne Flats ridgeline (still part of the wetlands complex) near point G (35° 31' 21.17"S, 148° 47' 42.78"E).

From point G the boundary continues in a southerly direction to Point H at the most south easterly point of the site (35° 32' 15.93"S, 148° 47' 13.90"E). The boundary line then heads generally west to point I (35° 32' 17.88"S, 148° 47'06.72"E). Near point I the boundary crosses an unnamed tributary of Stockyard Creek. From point I the boundary then heads in a generally westerly direction to point J (35° 32' 14.04"S, 148° 46' 45.59"E). From point J the boundary continues on in a straight line to meet the starting point 10 m off the eastern road edge of Mt Franklin road (point A), encompassing the southern end of Cheyenne Flats.

2.2.2 - General location

a) In which large administrative region does the site lie?

Australian Capital Territory

b) What is the nearest town or population centre?

Ginini Flats Ramsar Complex is located 40 kilometres south-west of Canberra. According to the Australian Bureau of Statistics, the population of the ACT was 472,800 in 2024.

2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries?

Yes ☐ No ☒

b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party?

Yes ☐ No ☒

2.2.4 - Area of the Site

Official area, in hectares (ha):

350

Area, in hectares (ha) as calculated from GIS boundaries

350.185

2.2.5 - Biogeography

Biogeographic regions	
Regionalisation scheme(s)	Biogeographic region
Other scheme (provide name below)	Murray Darling Basin Division
Other scheme (provide name below)	Australian Alps

Other biogeographic regionalisation scheme

Within Australia, the Australian Hydrological Geospatial Fabric (Geofabric), Integrated Marine Coastal Regionalisation of Australia (IMCRA) and/ or the Interim Biogeographic Regionalisation for Australia (IBRA) are the biogeographic regionalisation schemes typically used.

Bureau of Meteorology (2012). Australian Hydrological Geospatial Fabric (Geofabric): Topographic Drainage Divisions and River Regions – Murray-Darling Basin, Border Rivers Region. (http://www.bom.gov.au/water/geofabric/documents/BOM002_Map_Poster_A3_Web.pdf)

The Australian Hydrological Geospatial Fabric (Geofabric) is a specialised Geographic Information System (GIS). It registers the spatial relationships between important hydrological features such as rivers, water bodies, aquifers and monitoring points. The National Topographic Drainage Divisions and River Regions are currently derived from Geofabric version 2. These provide a set of surface water reporting units based on drainage-enforced digital elevation models and are used to depict where water flows and drains across the landscape.

Commonwealth of Australia (2012). Interim Biogeographic Regionalisation for Australia, Version 7 – Darling Riverine Plains. <https://www.environment.gov.au/land/nrs/science/ibra/australias-bioregions-maps>

The interim Biogeographic Regionalisation for Australia (IBRA) describes the biogeographic regions within Australia. Subdivisions of IBRA regions provide finer scale regions of the Australian landscape. Vegetation community and land system mapping undertaken by the states and territories have been used to establish IBRA Region and Subregion Boundaries. This information can potentially be used to identify regional ecosystems across Australia.

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

☒ Criterion 1: Representative, rare or unique natural or near-natural wetland types

Hydrological services provided

The Ginini Flats Subalpine Bog Complex is of local-scale hydrological importance due to the role the wetlands play in maintaining water quality and, to a lesser extent, moderating runoff. The Ginini Flats Subalpine Bog Complex is located in the Cotter River catchment which is the primary water supply for the city of Canberra.

Other reasons

The Ginini Flats Subalpine Bog Complex incorporates one Ramsar wetland type (Ramsar Convention 2008): Non-forested peatlands; which includes shrub or open bogs, swamps and fens (Ramsar type U). This wetland type is composed of: sphagnum bogs, sedgeland, wet herbfield, wet heath, and tall wet health (Hope et al., 2009). Alpine and subalpine sphagnum bogs and associated fens have a limited geographic distribution in Australia. The bogs within the site are at the northern biogeographical limit of this habitat type within the Murray–Darling Drainage Division. Prior to the 2003 bushfires, the sphagnum bog component of the site was recognised as one of the largest in Australia (Costin, 1954).

☒ Criterion 2 : Rare species and threatened ecological communities

Optional text box to provide further information

The Ginini Flats Subalpine Bog Complex is part of an endangered ecological community listed nationally as 'Alpine Sphagnum Bogs and Associated Fens' under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). It is listed locally as 'High Country Bogs and Associated Fens' under the Nature Conservation Act 2014 (ACT). Sphagnum bogs have a limited distribution in Australian which adds to the site's significance.

The site supports a number of species that are listed as threatened nationally under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), and/ or internationally under the IUCN Red List, including:

- northern corroboree frog, *Pseudophryne pengilleyi* (EPBC and IUCN – critically endangered)
- broad-toothed rat (mainland), *Mastacomys fuscus mordicus* (EPBC – endangered)
- Riek's crayfish, *Euastacus riei* (EPBC - endangered)
- Latham's snipe, *Gallinago hardwickii* (EPBC – vulnerable)
- mountain skink, *Liopholis montana* (EPBC – endangered)
- alpine water skink, *Eulamprus kosciuskoi* (EPBC – vulnerable)
- alpine (cold) spiny crayfish, *Euastacus crassus* (IUCN – endangered)
- Brandy Mary's leek orchid, *Prasophyllum innubum* (EPBC and IUCN – critically endangered)

☒ Criterion 3 : Biological diversity

Justification

The Ginini Flats Subalpine Bog Complex is at the northern biogeographic limit of this habitat type within the Murray–Darling Drainage Division and is of importance in maintaining the genetic and ecological diversity of a number of endemic and restricted species found in the High Country Bogs and Associated Fens of the ACT which are part of the nationally listed Alpine Sphagnum Bogs and Associated Fens Ecological Community. The Ramsar site is a composite of subalpine Sphagnum bogs and associated wet heath and wet grassland habitats occupying a series of interconnected wetlands. Sites with extensive bog development dominated by Sphagnum are uncommon on the mainland of Australia. Key plant species associated with the wetlands include peat moss (*Sphagnum cristatum*), alpine plum pine (*Podocarpus lawrencei*), alpine ballart (*Exocarpos nanus*), dwarf buttercup (*Ranunculus millanii*), silver caraway (*Oreomyrrhis argentea*), and *Craspedia* sp. (Helman and Gilmour, 1985). The Ginini Flats Subalpine Bog Complex is an even more important site for biological diversity following the 2020 Orroral bushfire, as it is the only major Sphagnum bog that did not burn in the ACT.

☒ Criterion 4 : Support during critical life cycle stage or in adverse conditions

Optional text box to provide further information

The site provides critical habitat for breeding cycles of the northern corroboree frog (*Pseudophryne pengillei*). The northern corroboree frog relies on the availability of small ponds in the wetlands for nests; with suitable ponds formed by a high-water table accompanied by suitable hydrological conditions such as low flow rates. The site supports greater than one per cent of individuals in the wild of the northern corroboree frog.

In addition, the site provides critical habitat for breeding cycles of Riek's crayfish (*Euastacus reiki*). The species is restricted to high country streams and bogs and has not been found in the absence of permanent surface water (Lintermans 2021). The area also provides breeding and refuge habitat for the known altitude limit of the alpine (cold) spiny crayfish (*Euastacus crassus*). This crayfish species is now known to be restricted to the streams and bogs of the north-west of the ACT.

Further, the site is a key habitat for the internationally migratory Latham's snipe (*Gallinago hardwickii*) – a nationally listed wetlands dependent threatened species, providing feeding and roosting habitat during its non-breeding season.

The Ginini Flats wetland complex is an important refuge site following the 2020 Orroral bushfire, as it is the only major Sphagnum bog that did not burn in the ACT.

☒ Criterion 9 : >1% non-avian animal population

Optional text box to provide further information

More than 1% of the wild population of the northern corroboree frog has been recorded in the Ramsar site.

A survey conducted in 2009 found the Ginini Flats wetland population represented nearly 50% of the higher elevation population of northern corroboree frogs at the known breeding sites (Murray Evans 2015 pers. comm.). Once abundant, this species has declined dramatically in the wild over the last 30 years, primarily due to the amphibian chytrid fungus. A captive population for the species was established in 2003 at Tidbinbilla Nature Reserve, and releases of eggs and frogs were made into Ginini Flats between 2011 and 2020 to bolster wild historic populations with monitoring detecting small populations. In 2020, a new low-elevation release site was established to test if more mild conditions might increase the maturation rate of the frogs and thus improve their chance of survival. Frogs were detected in early 2024 in the Ginini Flats Ramsar site.

3.2 - Plant species whose presence relates to the international importance of the site

Phylum	Scientific name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
Plantae								
TRACHEOPHYTA / MAGNOLIOPSIDA	<i>Chaerophyllum argenteum</i>	☐	☒	☐		☐	Rare in the ACT.	This species is also known as <i>Oreomyrrhis argentea</i> . <i>Oreomyrrhis argentea</i> is characteristic of bogs in the ACT and contributes to the biodiversity. It is rare in the ACT.
TRACHEOPHYTA / MAGNOLIOPSIDA	<i>Exocarpos nanus</i>	☐	☒	☐		☐	Rare in the ACT.	This is a key species associated with the site. It grows in subalpine areas including sphagnum bogs. It is rare in the ACT.
TRACHEOPHYTA / PINOPSIDA	<i>Podocarpus lawrencei</i>	☐	☒	☐	LC	☐	Rare in the ACT.	This is a significant species associated with the site. It grows in alpine and subalpine areas of southeastern Australia. It is rare in the ACT.
TRACHEOPHYTA / LILIOPSIDA	<i>Prasophyllum innubum</i>	☒	☒	☐	CR	☐	Nationally listed (EPBC Act) - critically endangered.	This is a nationally and internationally listed threatened species.
TRACHEOPHYTA / MAGNOLIOPSIDA	<i>Ranunculus millanii</i>	☐	☒	☐		☐	Rare in the ACT.	This is a key species associated with the site. The site is at the northernmost limit of this species' range. It is rare in the ACT.
BRYOPHYTA / SPHAGNOPSIDA	<i>Sphagnum cristatum</i>	☐	☒	☐		☐		Sphagnum cristatum is characteristic of bogs in the ACT, and forms part of a nationally listed threatened ecological community. It contributes to the biodiversity of the site.

The Kiandra Greenhood (*Pterostylis oreophila*) may also be present at the site and is listed as critically endangered internationally under the IUCN Red List, nationally under the EPBC Act, and locally under the Nature Conservation Act (ACT). While there are currently no known occurrences, the Ginini Flats Wetland Complex contains appropriate habitat and falls within the extent of occurrence for the species in the ACT.

Sites with extensive bogs dominated by *Sphagnum* are uncommon on the mainland of Australia. Significant plant species associated with the wetlands include the peat moss (*Sphagnum cristatum*), alpine plum pine (*Podocarpus lawrencei*), alpine ballart (*Exocarpos nanus*), dwarf buttercup (*Ranunculus millanii*), silver caraway (*Oreomyrrhis argentea*), and *Craspedia* sp. (Helman and Gilmour, 1985).

3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence ¹⁾	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
Others																	
CHORDATA / SQUAMATA	<i>Eulamprus kosciuskoi</i>	☒	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐	Nationally listed (EPBC) –vulnerable	C2: Nationally listed threatened species. This species may be wetland dependent This species is found at isolated, high elevation sites in NSW, ACT and Victoria. C3: the site is import for maintaining the genetic and ecological diversity of a number of endemic and restricted species found in subalpine wet heaths and bogs.

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA / SQUAMATA	<i>Liopholis montana</i>	☒	☒	☐	☐	☐	☐	☐	☐				NT	☐	☐	Nationally listed (EPBC) –endangered. Locally listed (ACT Nature Conservation Act) - endangered	C2: Nationally listed wetland dependent threatened species. C4: This species has a restricted area of occupancy, severe fragmentation, habitat loss and inferred decline in number of sub-populations and mature individuals at the national level. The site provides critical habitat for this species.
CHORDATA / MAMMALIA	<i>Mastacomys fuscus</i>	☒	☒	☐	☐	☒	☐	☐	☐				NT	☐	☐	Nationally listed (EPBC) –endangered Locally listed (ACT Nature Conservation Act) - endangered	The subspecies <i>Mastacomys fuscus mordicus</i> occurs at the site. C2: Nationally listed wetland dependent threatened species. C3: the site is important for maintaining the genetic and ecological diversity of a number of endemic and restricted species found in subalpine wet heaths and bogs. C4: This species has a highly fragmented distribution mainly in alpine and sub-alpine bogs and fens in NSW, Vic and the ACT. The site provides critical habitat for this species. The broad-toothed rat (mainland) was reassessed from vulnerable to endangered in 2024 following an assessment of the impact of the 2020 bushfires on the species.
CHORDATA / AMPHIBIA	<i>Pseudophryne pengilleyi</i>	☒	☒	☐	☒	☒	☐	☐	☐	50	2015	50	CR	☐	☐	Nationally listed (EPBC) – critically endangered . Locally listed (ACT Nature Conservation Act) - critically endangered	C2: Nationally and internationally listed wetland dependent threatened species. C3: the site is import for maintaining the genetic and ecological diversity of a number of endemic and restricted species found in subalpine wet heaths and bogs. C4: The population at Ginini Flats was one of the largest known populations of this uncommon species, however it is approaching local extinction in the wild due to Amphibian Chytrid fungus. The site provides critical habitat for this species. C9: This species exceeds the 1% threshold at the site. There are estimated to be less than 100 adult northern corroboree frogs remaining in the wild across the species' range in the ACT.
Fish, Mollusc and Crustacea																	
ARTHROPODA / MALACOSTRACA	<i>Euastacus crassus</i>	☒	☒	☐	☐	☒	☐	☐	☐				EN	☐	☐		C2: Internationally listed wetland dependent threatened species. C3: the site is import for maintaining the genetic and ecological diversity of a number of endemic and restricted species found in subalpine wet heaths and bogs. C4: The species is restricted to high country streams and bogs. The site provides critical habitat for this species.
ARTHROPODA / MALACOSTRACA	<i>Euastacus rieki</i>	☒	☒	☐	☐	☒	☐	☐	☐				EN	☐	☐	Nationally listed (EPBC) – endangered Locally listed (ACT Nature Conservation Act) - endangered	C2: Nationally and internationally listed wetland dependent threatened species. C3: the site is import for maintaining the genetic and ecological diversity of a number of endemic and restricted species found in subalpine wet heaths and bogs. C4: The species is restricted to high country streams and bogs. The site provides critical habitat for this species.
Birds																	
CHORDATA / AVES	<i>Gallinago hardwickii</i>	☒	☒	☐	☐	☐	☐	☐	☐				NT	☐	☐	Nationally listed (EPBC) – vulnerable, migratory.	C2: Nationally listed wetland dependent threatened species. C4: This species migrates internationally through the East Asian-Australasian Flyway and depends on habitat within Australia for resting and feeding during its non-breeding season. This species is listed on the Japan-Australia Migratory Bird Agreement (JAMBA), China-Australia Migratory Bird Agreement (CAMBA) and the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA). It is also listed on Appendix II of the Convention on Migratory Species (CMS) as a member of the family Scolopacidae.

1) Percentage of the total biogeographic population at the site

Ginini Flats Subalpine Bog Complex provides important habitat for the northern corroboree frog (*Pseudophryne pengilleyi*), which is an endemic species found only at high altitudes in the Fiery Range in Kosciusko National Park (NSW) and the Brindabella Range near Canberra (in NSW and ACT). The numerous pools scattered throughout the bogs and wet heaths at Ginini Flats provide an important variety of potential breeding sites for the species. Suitable ponds are formed by a high-water table accompanied by suitable hydrological conditions such as low flow rates. Females briefly enter the bogs to lay approximately 25 eggs above the water line in these nests. The eggs continue to develop in the nest over a two-month period until a phase of suspended development is triggered. Tadpoles of the Northern Corroboree frog can hatch in autumn if there is sufficient rainfall, and the tadpoles develop in the pools over winter. After hatching, tadpoles feed on small amounts of organic detritus and, later as frogs, small invertebrates including black ants (Carey et al. 2003). The frogs move from the bog communities to shelter under logs and amongst leaf litter in surrounding woodland over the winter.

Riek's crayfish is endemic to the high country of the Australian Capital Territory (ACT) and southern New South Wales (NSW). The crayfish lives in small to medium streams and wet areas near the edges of the water. It can be found in natural environments like grassy plains and eucalyptus forests, but also in places changed by humans like grazing lands and pine plantations. In winter, most of its home is covered in snow or ice. The Riek's crayfish dig deep burrows near creeks that reach the water table, and sometimes burrows under rocks or plants along the edge of streams.

There is a lack of baseline ecological information on macroinvertebrates associated with Ginini Flats Wetland Complex, although the body of research suggests that the invertebrate fauna of bog environments is highly diverse given the heterogeneity of habitats found within bog environments.

3.4 - Ecological communities whose presence relates to the international importance of the site

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
Alpine Sphagnum Bogs and Associated Fens	☒	The ecological community can usually be defined by the presence or absence of <i>Sphagnum</i> spp., the most common of which is <i>Sphagnum cristatum</i> . Refer to ECD at 6.1.2ii for comprehensive description.	Listed nationally as an endangered ecological community under the EPBC Act.

Optional text box to provide further information

The ecological community is also locally listed as endangered under the ACT Nature Conservation Act 2014 as High Country Bogs and Associated Fens. For more information about the local listing, see: <https://www.act.gov.au/environment/animals-and-plants/act-threatened-species/high-country-bogs-and-a-ssociated-fens>

The ACT High Country Bogs and Associated Fens Ecological Community (ACT Bogs and Fens) is defined by a peat substratum on which *Sphagnum* species may or may not occur. The ACT Bogs and Fens cover around 740 ha and are mainly located in the mountain and valley landscapes of Namadgi National Park at elevations from 720 to 1718 m above sea level.

Some of the reasons the ecological community was listed as Endangered were due to:

- Its small geographic distribution coupled with significant demonstrable threats (including climate change and fire);
- Continued decline of functionally important species; and
- Severe reduction of the community's integrity across its range.

The Alpine Sphagnum Bogs and Associated Fens ecological community is known to provide significant habitat for a number of endemic and threatened fauna species, including the *Pseudophryne pengilleyi* (northern corroboree frog).

For more information about the national listing, see: <https://www.environment.gov.au/biodiversity/threatened/communities/pubs/29-conservation-advice.pdf>

4 - What is the Site like? (Ecological character description)

4.1 - Ecological character

The key components and processes of the Ginini Flats Ramsar site are:

- Biophysical setting:** The underlying geology consists of deformed granitic rocks of Silurian age overlain by Ordovician metasediments, which are extensively folded and composed of quartz arenite, siltstone and slate, with occasional hornfels beds. The geology is significant as the combination of fractures combined with the alternating impervious and semi - impervious metasediments causes a down - welling of surface waters into the massive underlying granitoids. Water flowing through interstitial spaces over the granitoids is forced closer to the surface at the edge of the metasediments, resulting in seepages and spring lines. The combination of these processes results in conditions suitable for the continuous growth of Sphagnum and other wetland plants that have been recognised as significant in this subalpine environment.
- Hydrology:** The site is located at the headwaters of Ginini Creek which forms the base of a small catchment of 410 ha. Ginini Flats Wetland Complex has relatively high rainfall (around 1100-1250 mm/yr).
- Water quality:** The surface water within the site is unpolluted, slightly acidic, has low conductivity, and very low turbidity. The site plays a role in water filtration and buffering of nutrients and sediments.
- Peat formation:** peat is comprised of two main layers, the surface, living Acrotelm that experiences fluctuations in water levels and the lower, anaerobic Catotelm which is typically saturated. A net positive water balance is considered essential for the functional integrity of peatlands.
- Nutrient dynamics and carbon cycling:** Peat bogs such as Ginini Flats can be important components of aquatic and terrestrial systems as they are able to influence ecosystem function by storage of organic matter, alteration of hydrology and interception or transformation of nutrients. Peat may be a significant carbon sink or source depending on climatic and hydrological conditions.
- Vegetation:** The peatland provides a variety of vegetation types within the wetland complex including Sphagnum bogs, fens, wet heath and wet grassland. There is substantial variation in vegetation composition in the bog complex, including a mosaic of bog, wet heath, wet herbfield, sedgeland, dry heath and tall wet heath. The threatened Brandy Mary's leek orchid has been found at the site, as well as numerous other species of orchid, demonstrating its importance for orchid diversity.
- Fauna:** At time of Ramsar listing (in 1996), the northern corroboree frog was recognised as an important value of the site which was believed to hold one of the largest known populations of this species. Vertebrate species contributing to the ecological character of the site that have been found or are expected to be present include: the broad - toothed rat (mainland), mountain skink, alpine water skink, and Latham's snipe. The native mountain galaxias (Galaxias olidus) inhabits the small streams that bisect the site. A number of notable invertebrate species have been recorded or are likely to occur within the Ramsar site. Aquatic species include: Riek's crayfish (Euastacus reiki) and alpine (cold) spiny crayfish (Euastacus crassus). Terrestrial invertebrate species include: Polyzosteria virridisma (metallic bog cockroach), Acripeza reticulate (mountain grasshopper), Yeelanna sp. (spotted grasshopper), Kosciuscola tristis (alpine chameleon grasshopper) and various species of Lycosa (alpine wolf spiders). There is a lack of data regarding invertebrate fauna associated with Ginini Flats at time of listing.

Key ecosystem services include: wetland products; climate regulation; erosion protection; water quality maintenance; biodiversity; soil formation; recreation and tourism; and scientific and educational.

Components, processes and services considered critical to the ecological character of the site are:

- hydrology
- nutrient dynamics and carbon cycling
- vegetation
- peat formation

4.2 - What wetland type(s) are in the site?

Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Fresh water > Marshes on peat soils >> U: Permanent Non-forested peatlands	Peat bogs and fen marshes	1	65	Rare

Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
Temperate Montane Grassland	
Subalpine Woodland	291

(ECD) Habitat connectivity

The Ginini Flats Subalpine Bog Complex is comprised of a series of interconnected wetlands.

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species		
Phylum	Scientific name	Position in range / endemism / other

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/LILIOPSIDA	<i>Australopyrum velutinum</i>	Occurs in open forest and grassland, on heavy soils at higher altitudes.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Baeckea gunniana</i>	Endemic to alpine and sub-alpine areas of SE Australia. Important for post-fire regeneration.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Baeckea utilis</i>	Common at higher altitudes, grows in heath, forest/ alpine herbfield. Important for post-fire regeneration.
TRACHEOPHYTA/LILIOPSIDA	<i>Baloskion australe</i>	Unique to montane bogs and fens community
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Barbarea grayi</i>	Occurs in damp areas near high-altitude streams.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Brachyscome obovata</i>	Occurs in sphagnum bogs, carex fen, stream margins and alpine and subalpine heathland.
TRACHEOPHYTA/LILIOPSIDA	<i>Caladenia alpina</i>	Occurs in moist well drained soils in subalpine woodlands, especially with Eucalyptus pauciflora.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Callistemon pityoides</i>	Important for post-fire regeneration as it can resprout from their base after light fires.
TRACHEOPHYTA/LILIOPSIDA	<i>Carex gaudichaudiana</i>	Readily resprouts after fire and stabilises burnt fens within a few weeks.
TRACHEOPHYTA/LILIOPSIDA	<i>Carex hebes</i>	Occurs in subalpine woodlands and on exposed slopes.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Celmisia pugioniformis</i>	Occurs in subalpine and alpine herbfield, heaths, bogs, and woodlands.
TRACHEOPHYTA/LILIOPSIDA	<i>Chiloglottis turfosa</i>	Occurs in boggy sites amongst grasses and sedges.
TRACHEOPHYTA/LILIOPSIDA	<i>Chiloglottis valida</i>	Occurs in grassy forest; particularly common in montane and subalpine regions – south of the Brindabella Ranges.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Craspedia aurantia</i>	(var. aurantia) Occurs on rocky slopes and in subalpine sclerophyll woodlands on the Brindabella and Bimberi Ranges.
TRACHEOPHYTA/LILIOPSIDA	<i>Diuris monticola</i>	Often grows in montane grassland, alpine meadows, montane forest, particularly E. pauciflora woodland.
TRACHEOPHYTA/LILIOPSIDA	<i>Empodisma minus</i>	Keystone species. Forms a tough cohesive root mat which readily resprouts after fire.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Epacris breviflora</i>	Long-lived shrubs that can tolerate low pH and colonise sphagnum hummocks.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Epacris microphylla</i>	Long-lived shrubs that can tolerate low pH and colonise sphagnum hummocks.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Epacris paludosa</i>	Long-lived shrubs that can tolerate low pH and colonise sphagnum hummocks.
TRACHEOPHYTA/LILIOPSIDA	<i>Eriochilus magenteus</i>	Occurs in alpine meadows with grasses and sedges. Prefers moist sites near swamps, bogs and streams.
TRACHEOPHYTA/LILIOPSIDA	<i>Gastrodia procera</i>	Occurs in accumulated litter in wet sclerophyll forest and E. pauciflora communities.
TRACHEOPHYTA/LILIOPSIDA	<i>Gastrodia sesamoides</i>	Occurs in leaf litter under E. pauciflora at intermediate to high altitudes.

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/LILIOPSIDA	<i>Gastrodia surcula</i>	Occurs in higher elevation wet sclerophyll forests.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Gentianella muelleriana jingerensis</i>	Endemic to the Bimberi and Brindabella Ranges in ACT & NSW. >80% of its known range in the ACT impacted by 2020 bushfire.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Grevillea diminuta</i>	Occurs on rocky slopes and in subalpine sclerophyll woodlands on the Brindabella and Bimberi Ranges.
TRACHEOPHYTA/LILIOPSIDA	<i>Isolepis crassiuscula</i>	Occurs in alpine and high alpine water sources – creeks, pools, bogs and swamps.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Microseris lanceolata</i>	Occurs in southeastern Australia in alpine and subalpine areas of the ACT, including wet areas.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Ozothamnus cupressoides</i>	Occurs in bogs and subalpine heathls.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Pimelea ligustrina ciliata</i>	Occurs in open forest, woodland and heath above 1400m altitude.
TRACHEOPHYTA/LILIOPSIDA	<i>Poa costiniana</i>	Indicator species for change in character. Re-seeds profusely and can resprout if lightly burnt. It will invade bogs and fens if they dry out. The presence of this species indicates degradation of the Ecological Community.
TRACHEOPHYTA/LILIOPSIDA	<i>Prasophyllum alpinum</i>	Occurs between 1000m – 2000m elevation in subalpine to alpine herbfield, commonly in tussock grassland.
TRACHEOPHYTA/LILIOPSIDA	<i>Prasophyllum sphacelatum</i>	Grows in subalpine herbfield, often in tussock grassland, and in seepage areas as well as among grass and shrubs
TRACHEOPHYTA/LILIOPSIDA	<i>Prasophyllum suttonii</i>	Occurs in tussock grassland in subalpine to alpine herbfield, moist to wet areas around streams and bogs and woodland
TRACHEOPHYTA/LILIOPSIDA	<i>Prasophyllum venustum</i>	This species had close to 100% of its known range impacted by the 2020 Orroral bushfire.
TRACHEOPHYTA/LILIOPSIDA	<i>Pterostylis aestivalis</i>	Occurs among grass on slopes in high rainfall forests.
TRACHEOPHYTA/LILIOPSIDA	<i>Pterostylis coccinea</i>	Occurs among grass in open sclerophyll forests.
TRACHEOPHYTA/LILIOPSIDA	<i>Pterostylis crassicaulis</i>	Occurs among grass tussocks and sedges in subalpine grassland and herbfield in well-drained to seasonally moist sites.
TRACHEOPHYTA/LILIOPSIDA	<i>Pterostylis falcata</i>	Widespread. Occurs in moist areas near seepages, wetland edges and streams.
TRACHEOPHYTA/LILIOPSIDA	<i>Pterostylis monticola</i>	Common in moist grassy areas and near streams in montane forests and subalpine shrubland.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Richea continentis</i>	Long-lived shrubs that can tolerate low pH and colonise sphagnum hummocks. Unique to montane bogs and fens community.
TRACHEOPHYTA/POLYPODIOPSIDA	<i>Sceptridium australe</i>	Widespread but uncommon. Prefers damp sites, can occur open forest, well-drained plains, sub-alpine grasslands, mossy soils
TRACHEOPHYTA/LILIOPSIDA	<i>Spiranthes australis</i>	Occurs in boggy, marshy areas. Widespread on the east coast.
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Stylidium montanum</i>	Occurs in subalpine and alpine damp grassland and wet alpine heathlands. Often borders streams.

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/LILIOPSIDA	<i>Thelymitra cyanea</i>	Occurs in sphagnum bogs or among the grasses and sedges of damp, peaty soils, in lowland to subalpine areas.

Invasive alien plant species

Phylum	Scientific name	Impacts	Changes at RIS update
TRACHEOPHYTA/LILIOPSIDA	<i>Anthoxanthum odoratum</i>	Potential	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Rubus fruticosus</i>	Potential	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Rumex acetosella</i>	Actual (minor impacts)	No change
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Salix nigra</i>	Potential	No change

Optional text box to provide further information

The area has been actively managed, as evidenced by the very low weed burden.

Poa costiniana (bog snowgrass) is an indicator species for change in character at the site. This species re-seeds profusely and can resprout if lightly burnt. It will invade bogs and fens if they dry out. The presence of this species indicates degradation of the ecological community.

Celmisia sp. *Pulchella* (M.Gray & C.Totterdell 7079), the narrow leaved snow daisy, does not come up on the species list. This species occurs in subalpine woodlands and on exposed slopes.

Additional invasive plants in the area, or potentially in the area, include:

- *Festuca* sp.
- *Hypochaeris* sp.
- *Juniperus* sp.
- *Malus* sp.
- *Pinus* sp.
- *Prunus* sp.
- *Salix* sp. such as *S. caprea*, *S. cinerea* and *S. viminalis* and hybrids thereof.
- *Tragopogon* sp.

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Pop. size	Period of pop. est.	% occurrence	Position in range /endemism/other
ARTHROPODA/INSECTA	<i>Acripeza reticulata</i>				Habitat is mostly high-altitude grasslands, heathlands and woodlands.
CHORDATA/SQUAMATA	<i>Acritoscincus duperreyi</i>				Habitat is woodlands, grasslands and heathlands.
CHORDATA/SQUAMATA	<i>Anepischetosia maccayi</i>				Habitat is wet sclerophyll forest.
CHORDATA/SQUAMATA	<i>Austrelaps ramsayi</i>				Usually restricted to alpine areas. Habitat is montane heath, woodland, sclerophyll forests, along water bodies, and in swampy areas with thick clumps of tussock grass.
ARTHROPODA/INSECTA	<i>Austroaeschna flavomaculata</i>				Rare and usually restricted to mountain water bodies.
CHORDATA/SQUAMATA	<i>Carinascincus coventryi</i>				Found at most high altitudes in the Canberra region.
CHORDATA/SQUAMATA	<i>Drysdalia coronoides</i>				Nocturnal, sheltering underground debris. Can be found in mountainous areas or lowlands-grasslands, montane forests and open woodlands.
CHORDATA/REPTILIA	<i>Eulamprus heatwolei</i>				Prefers rocky habitats near water.
CHORDATA/REPTILIA	<i>Eulamprus tympanum</i>				Usually lives near small creeks and other high quality fresh water sources.

Phylum	Scientific name	Pop. size	Period of pop. est.	% occurrence	Position in range /endemism/other
ARTHROPODA/INSECTA	<i>Heteronympha cordace</i>				Australian endemic. Provides vital pollination services.
CHORDATA/AVES	<i>Hirundapus caudacutus</i>				This species breeds in Central Asia and Southern Siberia and migrates to India, Southeast Asia and Australia to feed on large swarms of flying insects.
CHORDATA/SQUAMATA	<i>Liopholis whitii</i>				Prefers rocky, shrubby heathland.
ARTHROPODA/INSECTA	<i>Neolucia hobartensis</i>				Australian endemic. Provides vital pollination services.
ARTHROPODA/INSECTA	<i>Oreisplanus munianga</i>				Australian endemic. Provides vital pollination services.
ARTHROPODA/INSECTA	<i>Oreixenica latialis</i>				This species occurs in mountainous areas and feeds on Poa species.
ARTHROPODA/INSECTA	<i>Polyzosteria viridissima</i>				This species s known only from a few localities in the Namadgi and Kosciuszko National Parks, along high alpine creek margins and in swamps.
CHORDATA/SQUAMATA	<i>Pseudemoia entrecasteauxii</i>				Threatened species, found in open grassy woodlands.
CHORDATA/SQUAMATA	<i>Pseudemoia pagenstecheri</i>				Habitat is open, lowland to montane grassy woodlands.
CHORDATA/SQUAMATA	<i>Pseudemoia rawlinsoni</i>				This species may be threatened, and is currently being assessed for listing under the national EPBC Act. IUCN status – data deficient.
CHORDATA/SQUAMATA	<i>Pseudemoia spenceri</i>				Distribution Widespread in the ACT and Monaro from lowlands to highlands.
CHORDATA/SQUAMATA	<i>Rankinia diemensis</i>				Burrowing, high altitude specialist.
CHORDATA/ACTINOPTERYGII	<i>Galaxias olidus</i>				Only known native fish species to occur in the ACT Bogs and Fens (although not restricted to these areas).

Invasive alien animal species

Phylum	Scientific name	Impacts	Changes at RIS update
CHORDATA/MAMMALIA	<i>Equus caballus</i>	Potential	unknown
CHORDATA/MAMMALIA	<i>Felis catus</i>	Actual (minor impacts)	unknown
CHORDATA/MAMMALIA	<i>Oryctolagus cuniculus</i>	Actual (minor impacts)	unknown
CHORDATA/MAMMALIA	<i>Rusa unicolor</i>	Actual (minor impacts)	No change
CHORDATA/MAMMALIA	<i>Sus scrofa</i>	Actual (minor impacts)	No change
ARTHROPODA/INSECTA	<i>Vespula germanica</i>	Potential	unknown
CHORDATA/MAMMALIA	<i>Vulpes vulpes</i>	Actual (minor impacts)	No change

Optional text box to provide further information

The mountain galaxias is the only known native fish species to occur in the ACT Bogs and Fens (although not restricted to these areas). This species has suffered fragmentation in distribution and reduction in numbers/populations elsewhere due to alien trout. The species is a good indicator of absence of invasive alien trout that are a serious threat to it, frogs, skinks and crayfish and its presence might also indicate recovery of bogs and fens after fire.

A number of notable invertebrate species have been recorded or are likely to occur within the Ramsar site.

Terrestrial invertebrate species include:

- Polyzosteria virridisma (metallic bog cockroach)
- Acripeza reticulate (mountain grasshopper),
- Yeelanna sp. (spotted grasshopper),
- Kosciuscola tristis (alpine chameleon grasshopper) and
- various species of Lycosa (alpine wolf spiders).

There is a lack of data regarding invertebrate fauna associated with the Ginini Flats Ramsar site.

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
C: Moist Mid-Latitude climate with mild winters	Cfb: Marine west coast (Mild with no dry season, warm summer)

Rainfall interpretation from climatic maps (Osborne 1990) concluded that average annual rainfall is in the vicinity of 1250mm/yr; around half of the rainfall of many other Sphagnum bog sites in the Australian Alps. Data from the Mt Ginini weather station indicates precipitation is around 1100mm/yr, however this is based on a relatively short period of time (since 2004).

Ginini Flats Subalpine Bog Complex is situated at the northern extreme of the climatic range for Sphagnum bog wetlands in the Australian Alps. Given the wetland is already at the limit of climatic tolerance, the greatest threat to it relates to change and the myriad impacts and potential feedback mechanisms that can occur. Climate change has the potential to alter all critical components and processes, for example hydrology, peat formation, vegetation, habitat availability, water quality, groundwater recharge, and thus the services that characterise the ecological character of the wetland.

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

Entire river basin ☐

Upper part of river basin ☒

Middle part of river basin ☐

Lower part of river basin ☐

More than one river basin ☐

Not in river basin ☐

Coastal ☐

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

The Ginini Flats Subalpine Bog Complex is in the upper reaches of the Cotter River catchment in the Murrumbidgee River Drainage Basin (within the Murray River Drainage Basin) in south - eastern Australia.

4.4.3 - Soil

Organic ☒

(Update)
Changes at RIS update

No change
☐
Increase
☐
Decrease
☐
Unknown
☒

No available information ☐

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)?
Yes ☒
No ☐

Please provide further information on the soil (optional)

Ginini Flats Subalpine Bog Complex has freely draining alpine humus soils that are typical of much of the Australian Alps subalpine areas.

Key threats affecting the integrity of the soil in the Ramsar site include soil erosion and frost heave.

4.4.4 - Water regime

Water permanence	
Presence?	Changes at RIS update
Usually permanent water present	unknown

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from surface water	☐	unknown
Water inputs from groundwater	☐	unknown
Water inputs from precipitation	☒	unknown

Water destination

Presence?	Changes at RIS update
Feeds groundwater	No change
To downstream catchment	No change

Stability of water regime

Presence?	Changes at RIS update
Water levels largely stable	unknown

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology:

Ginini Flats Subalpine Bog Complex is located at the headwaters of the Ginini Creek, part of the Middle Cotter Catchment within the Cotter River Catchment (the primary water supply for the city of Canberra). The Cotter River Catchment extends over 481 square kilometres and includes three sub - catchments: the Upper Cotter (Corin Dam Catchment), Middle Cotter (Bendora Dam Catchment to Corin Dam) and the Lower Cotter (Cotter Dam Catchment to Bendora Dam).

Ginini Flats Subalpine Bog Complex is located at the headwaters of the Ginini Creek which forms the base of a small catchment of 410 ha that rises from 1520m ASL to a maximum elevation at the summit of Mt Ginini of 1762m ASL.

Ginini Flats Subalpine Bog Complex has rainfall of around 1100–1250mm/yr. The site is of local - scale hydrological importance due to the role the wetlands play in maintaining water quality and, to a lesser extent, moderating runoff.

(ECD) Connectivity of surface waters and of groundwater	Surface water and groundwater fed wetland.
(ECD) Stratification and mixing regime	N/A

4.4.5 - Sediment regime

Sediment regime unknown ☒

(ECD) Water turbidity and colour	Water flowing through and out of the wetland has very low turbidity because of the intact, dense catchment vegetation.
(ECD) Light - reaching wetland	The wetland itself does not have a canopy as the vegetation across the wetland is shrubs and moss with occasional pools.
(ECD) Water temperature	Seasonally dependent. The wetland can have snow cover in winter.

4.4.6 - Water pH

Circumneutral (pH: 5.5-7.4) ☒

(Update) Changes at RIS update No change ☐ Increase ☐ Decrease ☐ Unknown ☒

Alkaline (pH>7.4) ☒

(Update) Changes at RIS update No change ☐ Increase ☐ Decrease ☐ Unknown ☒

Unknown ☐

Please provide further information on pH (optional):

pH has remained relatively stable at Ginini Flats Subalpine Bog Complex, ranging from 4.5-9.5 pH from 1999 to 2010. The pH range of potential sediments found in peatland profiles of the Snowy Mountains region is pH 4.5 – 6.5 (Hope and Nanson 2015)

4.4.7 - Water salinity

Fresh (<0.5 g/l) ☒

(Update) Changes at RIS update No change ☐ Increase ☐ Decrease ☐ Unknown ☒

Unknown ☐

4.4.8 - Dissolved or suspended nutrients in water

Oligotrophic ☒

(Update) Changes at RIS update No change ☐ Increase ☐ Decrease ☐ Unknown ☒

Unknown ☐

(ECD) Water conductivity	Low conductivity
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4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the ☐ i) broadly similar ☒ ii) significantly different ☐ site itself:

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Fresh water	Drinking water for humans and/or livestock	High

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	Medium
Erosion protection	Soil, sediment and nutrient retention	Medium
Pollution control and detoxification	Water purification/waste treatment or dilution	Medium
Climate regulation	Regulation of greenhouse gases, temperature, precipitation and other climatic processes	Medium
Hazard reduction	Flood control, flood storage	Medium

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Nature observation and nature-based tourism	High
Spiritual and inspirational	Cultural heritage (historical and archaeological)	High
Spiritual and inspirational	Contemporary cultural significance, including for arts and creative inspiration, and including existence values	High
Spiritual and inspirational	Inspiration	High
Scientific and educational	Type location for a taxon	Medium
Scientific and educational	Long-term monitoring site	Low
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	Medium

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part	High
Soil formation	Accumulation of organic matter	Medium
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	Medium
Nutrient cycling	Carbon storage/sequestration	Medium

Optional text box to provide further information

The site provides the following key ecosystem services:

- Wetland products: the site is part of Cotter River catchment, which is the primary water supply source for Canberra.
- Climate regulation: peat may be a significant carbon sink or source depending on climatic and hydrological conditions.
- Erosion protection: protection of soil surface from frost heave and accelerated erosion processes.
- Water quality maintenance: water filtration, buffering of nutrients and sediments.
- Biodiversity: supports a significant sub - set of regional flora species and an ecologically significant vegetation community. It was also the only major Sphagnum bog in the ACT that did not burn in the 2020 Orroral fire, which makes it a very important refuge for many species. This includes species with more than 80% of their known range in the ACT impacted, such as Mueller's snow-gentian and the charming leek orchid.
- Soil formation: supports peat soil formation.
- Recreation and tourism: walking and wildflower viewing.
- Scientific and educational: the site forms an unburnt control site for rehabilitation of fire-impacted bogs and fens in the area following the 2020 bushfires.
- Cultural: the site has high cultural value to the Traditional Custodians and includes evidence of over 8,000 years of their occupation and use.

Outside the site:

472,800

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site?

Yes

No

Unknown

4.5.2 - Social and cultural values

- i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland
- ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland
- iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples
- iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland

<no data available>

4.6 - Ecological processes

(ECD) Primary production	N/A
(ECD) Nutrient cycling	Peat bogs such as Ginini Flats can be important components of aquatic and terrestrial systems as they are able to influence ecosystem function by storage of organic matter, alteration of hydrology and interception or transformation of nutrients.

5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
Provincial/region/state government	☒	☒

Other

Category	Within the Ramsar Site	In the surrounding area
Unspecified mixed ownership	☒	☒

Provide further information on the land tenure / ownership regime (optional):

Ginini Flats Subalpine Bog Complex is encompassed within the Namadgi National Park in the Australian Capital Territory (ACT), which is managed by Parks and Conservation Service (PCS), a branch within the ACT Government's Environment, Planning and Sustainable Development Directorate. The western edge of the site extends close to the boundary between the ACT and NSW. Bimberi Nature Reserve is located on the NSW side of the border, offering similar protection to that of a national park. All the upper and middle sub-catchments of the Ginini Flats Subalpine Bog Complex are protected in Namadgi National Park.

The ACT region is the ancestral homeland of the Ngunnawal people. As Traditional Custodians of this land, the Ngunnawal people have used the area for tens of thousands of years and continue to feel a deep responsibility to preserve the spirit and stories of their ancestors throughout this landscape

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

ACT Parks and Conservation Service
Environment, Planning and Sustainable Development Directorate
ACT Government

Murrumbidgee River Corridor Parks and Conservation Depot.
1541 Cotter Rd Casuarina Sands ACT 2611

Provide the name and/or title of the person or people with responsibility for the wetland:

Area Manager, Murrumbidgee River Corridor

Postal address:

GPO Box 158 Canberra ACT 2601

E-mail address:

namadginationalpark@act.gov.au

5.2 - Ecological character threats and responses (Management)

5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Roads and railroads	unknown impact	unknown impact	☐	No change	☒	No change

Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Recreational and tourism activities	unknown impact	unknown impact	☒	No change	☒	No change

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Fire and fire suppression	unknown impact	unknown impact	☒	No change	☒	unknown

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Invasive non-native/ alien species	unknown impact	unknown impact	☒	unknown	☐	unknown

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Droughts	unknown impact	unknown impact	☒	unknown	☒	unknown
Temperature extremes	unknown impact	unknown impact	☒	unknown	☒	unknown

Please describe any other threats (optional):

The Ginini Flats Subalpine Bog Complex is protected within a National Park, limiting potential human threats to the site such as development and upper catchment impacts.

Threats to the ecological character of Ginini Flats Subalpine Bog Complex include:

- climate change: because bogs in the ACT are at the northern-most limit of their distribution (and presumably also their climatic limits), they are be particularly sensitive to climate change.
- fire
- feral animals: Post fire predation of *Euastacus* sp. and *Mastacomys fuscus* by foxes is known. Potential threats from feral animals include trampling, rooting, wallowing, stream incision, loss of peat, loss of vegetation cover, predation
- weeds: have the potential to displace native species, alter hydrological regime, reduce diversity, and introduce plant pathogens.
- chytrid fungus: has been a source of significant reduction of the northern corroboree frog population
- Epizootic Haematopoietic Necrosis Virus (EHNV): an Australian iridovirus that is known to affect introduced wild populations of redfin perch and farmed rainbow trout and has the potential to negatively impact several native fish species. It is a potential threat as it is not currently known to be present at the site, and
- changes to catchment infrastructure.

5.2.2 - Legal conservation status

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
National Park	Namadgi	https://www.parks.act.gov.au/fin d-a-park/namadgi-national-park	whole

5.2.3 - IUCN protected areas categories (2008)

- Ia Strict Nature Reserve ☐
- Ib Wilderness Area: protected area managed mainly for wilderness protection ☐
- II National Park: protected area managed mainly for ecosystem protection and recreation ☒
- III Natural Monument: protected area managed mainly for conservation of specific natural features ☐
- IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention ☐
- V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation ☐
- VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems ☐

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Habitat

Measures	Status
Hydrology management/restoration	Implemented
Catchment management initiatives/controls	Implemented
Habitat manipulation/enhancement	Implemented

Species

Measures	Status
Threatened/rare species management programmes	Implemented
Control of invasive alien plants	Implemented
Control of invasive alien animals	Implemented

Human Activities

Measures	Status
Livestock management/exclusion (excluding fisheries)	Implemented
Research	Implemented
Fisheries management/regulation	Implemented

Other:

In Australia, the ecological character of a designated Ramsar site is protected as a matter of national environmental significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

Has a management effectiveness assessment been undertaken for the site? Yes ☐ No ☒

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes ☐ No ☒

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site:

Namadgi Visitor Information Centre

URL of site-related webpage (if relevant): <https://www.parks.act.gov.au/find-a-park/namadgi-national-park>

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No, the site has already been restored

Further information

Restoration was undertaken post the 2003 fires. The area was not burnt in the 2020 fires.

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Plant community	Implemented
Animal community	Implemented
Water regime monitoring	Implemented

Monitoring is occurring under the following plans:

- Ginini Flats Wetland Complex Ramsar Site Management Plan https://www.environment.act.gov.au/__data/assets/pdf_file/0018/1060038/Ginini-Flats-Ramsar-Site-Management-Plan-ACCESS.pdf
- ACT Sphagnum Bog Rehabilitation and Monitoring Plan https://www.environment.act.gov.au/__data/assets/pdf_file/0007/2175694/act-sphagnum-bogs-and-fens-rehabilitation-and-monitoring-plan-2020-2031.pdf
- ACT High Country Bogs and Associated Fens Ecological Community Action Plan https://www.environment.act.gov.au/__data/assets/pdf_file/0009/2456388/2024-bogs-and-fens-action-plan.pdf
- ACT Northern Corroboree Frog (*Pseudophryne pengilleyi*) Action Plan https://www.environment.act.gov.au/__data/assets/pdf_file/0010/576550/Northern_Corroboree_Frog_Action_Plan_-_Combined.pdf

Additional monitoring programs:

- Sphagnum bog monitoring and management program: long-term condition monitoring will commence in Summer 2024
- conservation effectiveness monitoring program <https://bogs-fens-cemp-actgov.hub.arcgis.com/>
- northern corroboree frog monitoring, including long term monitoring as well as song meter monitoring (2021 and 2023)
- montane *Euastacus* surveys
- broad-toothed rat surveys
- pig damage impact surveys (program under review)
- Namadgi National Park sambar deer and pigs project <https://onlinelibrary.wiley.com/doi/10.1111/emr.12569>
- Australian Mountain Research Facility monitoring programs

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

This RIS update has been prepared using information from the Ginini Flats Subalpine Bog Complex Ramsar site documentation, including the Ecological Character Description; Management Plan/s; past Ramsar Information Sheets; and other key information sources as appropriate.

A full bibliography is included as an attachment under Section 6.1.2 vi

6.1.2 - Additional reports and documents

- i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)
<no file available>
- ii. a detailed Ecological Character Description (ECD) (in a national format)
<1 file(s) uploaded>
- iii. a description of the site in a national or regional wetland inventory
<no file available>
- iv. relevant Article 3.2 reports
<no file available>
- v. site management plan
<no file available>
- vi. other published literature
<1 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



Ginini treeline 2 (*Dylan Jones, DCCEEW, 03-10-2024*)



Ginini waterway 1 (*Dylan Jones, DCCEEW, 03-10-2024*)



Ginini waterway 2 (*Dylan Jones, DCCEEW, 03-10-2024*)



Ginini treeline 1 (*Dylan Jones, DCCEEW, 03-10-2024*)

6.1.4 - Designation letter and related data

Designation letter
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Date of Designation

1996-03-01