



BRUNEI

PHILIPPINES

PACIFIC OCEAN



MALAYSIA

INDONESIA

INDONESIA

PAPUA NEW GUINEA

TIMOR-LESTE

INDIAN OCEAN

Mataranka springs

CORAL SEA

Lawn Hill

AUSTRALIA

PACIFIC OCEAN

Nullarbor

Blue Waterhole

Piccaninnie Ponds

TASMAN SEA

Junee Cave

| Country | MIKAS springs | Coordinates / Nearby City | Spring discharge (Q in l/s,min/av/max) / tapped or not | Criteria* in order / Main justification */ H-historic, A-aesthetic, S-scientific, E-Economic, Ec-ecologic | Data collected by |
|--|----------------------|---|---|---|----------------------------|
| Australia  | 1. Piccaninnie Ponds | -38.049000° 140.942509° Z = 5-7 m asl South Australia, Nelson, Western Otway Basin | - /~ 1000 / - Not tapped. | A, Ec, S, H, E <i>Spring rises from karst conduits >100 m deep to feed a large wetland complex comprising 3 water bodies: First Pond (~10 m deep), Turtle Pond (4-6 m deep) and the Chasm (110 m deep). Because the spring is located <700 m from the coast on a very low gradient plain, the seawater-freshwater interface is at a shallow depth within the aquifer and intersects the Chasm, resulting in an input of sea water within the Chasm. In 1969 the Piccaninnie Ponds Conservation Park was declared, protecting ~450 ha of the original 1,200 ha system. In 2005, properties to the west and east were added to the reserve. Currently protected as a South Australian State Conservation Park. Listed on the Register of the National Estate by the Australian Heritage Commission in 2011.</i> | Susan White, John Webb |
| | 2. Junee Cave | 466900 5268290 Z = 288 m asl Tasmania, Maydena, Tyenna River/Derwent River | 202/1313/3616 The spring is not captured and minor amount is used for water bottling | S, Ec, A, H, E <i>The Eastern Australia's largest formally gauged perennial karst spring. It is linked to Ordovician Gordon Group limestone, overlain by horizontally bedded Permo-Triassic sediments. Over 400 cave entrances are located in the catchment; many are streamsinks which have been traced to Junee Cave. This is the most complex karst cave system in Eastern Australia, with Australia's deepest (-401 m) and one of its longest caves (23 km). Junee Cave and its immediate catchment is protected within Junee Cave State Reserve, while the broader catchment is protected in Mt Field National Park (part of the Western Tasmanian Wilderness World Heritage Area). The area characterized by well-preserved tall forest and alpine ecosystems in the catchment and diverse cave-adapted invertebrate fauna. Archaeological deposits demonstrating some of the most southerly Pleistocene habitation in the world.</i> | Ian Household John Webb |
| | 3. Lawn Hill | 18.73 S 138.45 E Z = 168 m asl NW Queensland Camooweal Gregory River | Av. 10-20 L/s, total flow of Lawn Hill Creek 720 L/s Not tapped. | A, S, Ec H, E <i>The series of streambed and subaerial springs are linked to Flat-lying Cambrian Thornton Limestone. This limestone contains an extremely rich fossil vertebrate fauna that is one of the most significant fossil deposits in the world, containing bones of turtles, fish, crocodiles, lizards, pythons, birds and mammals; it is a World Heritage Area. The springs are feeding a perennial</i> | John Webb |

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|--|---|--|--|---|----------------------------|
| | | | | <p>creek, which has carved a spectacular gorge, within which are impressive tufa dams. It is one of the most beautiful karst and karst-related sites in Australia; with its red walls and blue-green water, it is a well-known and very popular tourist attraction. Occupation at Lawn Hill by the Aboriginal Traditional Owners, the Waanyi people, dates back at least 17,000 years. They know this country as Boodjamulla country, because Boodjamulla—the Rainbow Serpent—formed Lawn Hill Gorge and created the permanent spring water.</p> <p>Protected within Boodjamulla National Park (Aboriginal Land)</p> | |
| | <p>4. Mataranka springs /Korran (Bitter Spring) and Rainbow Spring</p> | <p>-14.913484, 133.089968 Z = 130 m asl</p> <p>Mataranka, Northern Territory</p> | <p>Korran (Bitter): Av. 700 L/s Rainbow Spring: Av. 400 L/s</p> <p>Not tapped.</p> | <p>H. Ec, E, S, A</p> <p>The two springs drain very large catchment of Cambrian Tindall limestone aquifer. The area is occupied by Mangarrayi Traditional Owners for millennia known by several important dreaming stories. The two springs directly support a diverse freshwater ecosystem including threatened species (the Livistona palm and freshwater sawfish). The primary source of dry season flows for the Roper River, a pristine and unmodified river system (strong visual appeal, with the beautiful clear blue water). This is a major tourist attraction in the Northern Territory. Cavities within the tufa of the discharge zone have also attracted interest for the relatively high abundance of stygofauna. Springs under threat from growing extraction of groundwater from limestone aquifer for irrigation</p> | <p>Riley Nicholson</p> |

MIKAS – Piccaninnie Ponds

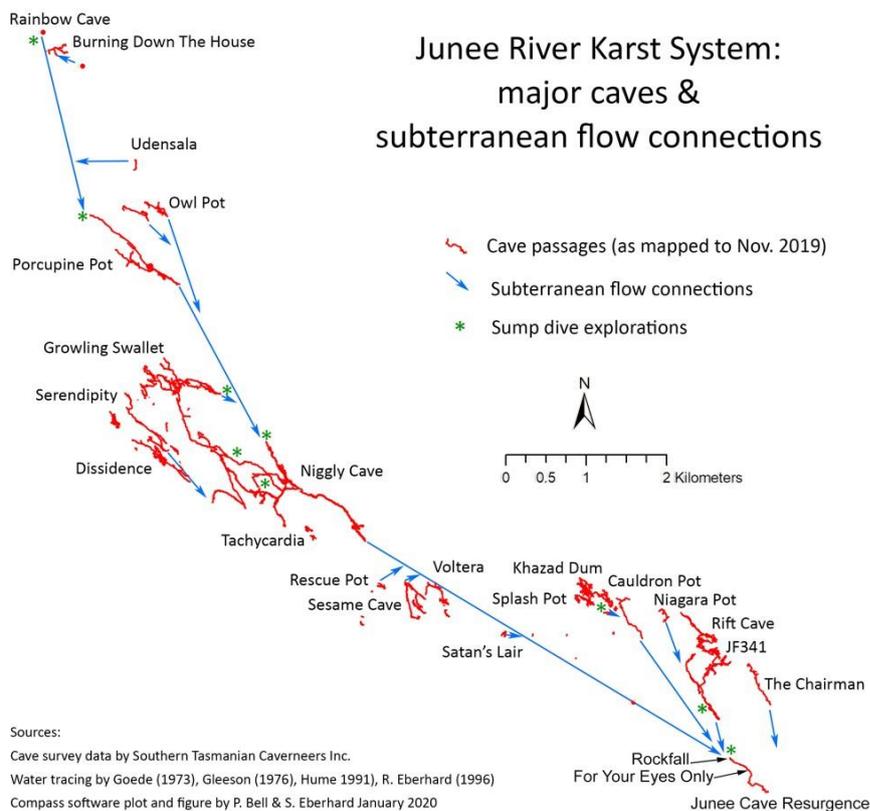


Configuration of Piccaninnie Ponds.



The Cathedral, western end of the Chasm, Piccaninnie Ponds. Photo Liz Rogers; published as Fig 14 in O'Brien et al., 2023, Australian Cave Diving; In Webb J.A., White S.Q. and Smith, G.K., Australian Caves and Cave Systems, 9-28. Springer.

MIKAS – Junee Cave

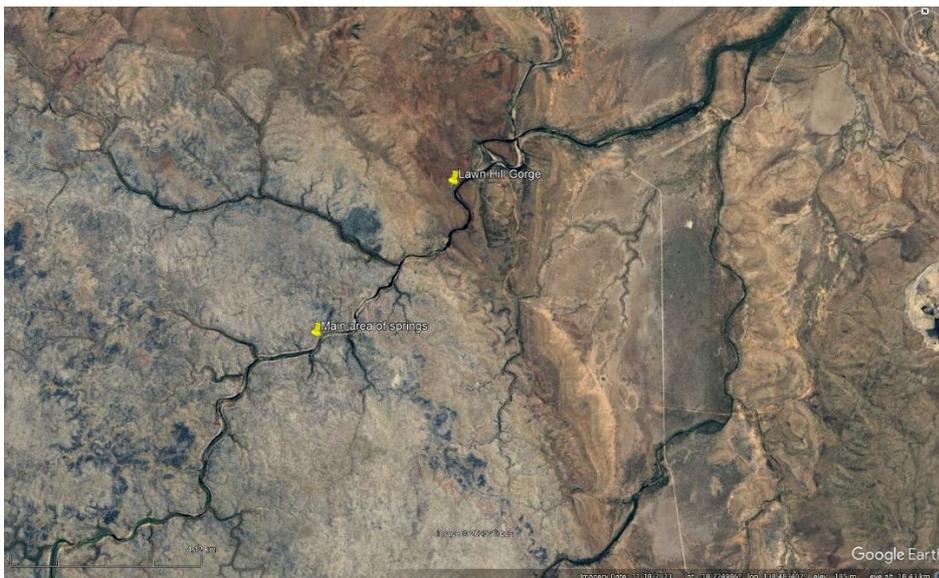


*Cave system connecting to Junee spring.
Prepared by Stefan Eberhard; published as Fig 4 in O'Brien et al., 2023, Australian Cave Diving; In Webb J.A., White S.Q. and Smith, G.K., Australian Caves and Cave Systems, 9-28. Springer.*



Stream passage between first and second sump, Junee spring. Photo Ken Smith. Published as Fig. 3 in in O'Brien et al., 2023, Australian Cave Diving; In Webb J.A., White S.Q. and Smith, G.K., Australian Caves and Cave Systems, 9-28. Springer.

MIKAS – Lawn Hill



Lawn Hill Creek, showing main area of springs and gorge cut through sandstone.



Lawn Hill gorge. Photo Winfried Weiss. Published as Fig. 15C in White et al., 2023, Northern Territory and Western Queensland; In Webb J.A., White S.Q. and Smith, G.K., Australian Caves and Cave Systems, 123-147. Springer.



Indarri Falls (tufa dam) within Lawn Hill gorge. Photo Hank Coppus. Published as Fig. 15A in White et al., 2023, Northern Territory and Western Queensland; In Webb J.A., White S.Q. and Smith, G.K., Australian Caves and Cave Systems, 123-147. Springer.

MIKAS – Mataranka springs



Satellite image of springs, note significant green area to south-east which indicates extent of vegetation supported by spring discharge.



Aerial Image of (Korran) Bitter Spring. Image source: Tourism Australia



Korran (Bitter Spring).



Tufa dam along Eley Creek (East of Bitter Spring); formed at a time when groundwater discharge was greater than today [Image from: 8]