Friends of Mound Springs Newsletter

Spring overflow, Mulligan Springs near Lake Callabonna

President's Report

It will be clear from this Newsletter that 2025 has been a busy year for FOMS. Four field trips in one season amount to a high level of activity, with a considerable amount of planning and work needed both before, during and after the trips themselves. This is particularly the case where physical works are involved – hardware stores are far removed from the mound springs country and literally everything that might be needed must be thought of and transported many hundreds of kilometres.

I am most grateful for the hard work put in by all of those who have been able to participate in the trips, but my thanks also go to those who – whilst not able to participate in the trips – support us through their ongoing membership and attendance at our twice-yearly meetings.

This support means a great deal to the Executive team which plans our work program, and I particularly want to thank the FOMS' office holders for all their hard work throughout such a busy year. We continue to build important links with key organisations such as the SA Arid Lands Board and its staff, and the Arabana and Dieri corporations, and we look forward to continuing this productive cooperation in 2026, a significant year because it will mark 20 years of operations for FOMS.

Colin Harris, PSM

In this edition we report on:

- **The wide range of activities undertaken by FOMS in a busy 2025 field program;**
- **The Finniss Springs Monitoring Project – a broad collaboration aiming to assist the conservation of the endangered plant, *Eriocaulon carsonii*;**
- **The initiation of a management planning process for Dieri country and FOMS' input to that;**
- **The GAB springs monitoring workshop held at Edgbaston Springs.**

Busy Field Season for FOMS Volunteers

2025 has proven to be yet another busy year for Friends of Mound Springs (FOMS) volunteers, with four trips undertaken to mound springs country. The trips have involved ongoing collaboration with the Arabana Aboriginal Corporation, the Arabana Rangers, the SA Arid Lands Landscape Board and pastoral lessees and a new collaboration with the Threatened Plant Action Group.

April 2025: Reconnaissance for Finniss Springs Monitoring Project

The field work kicked off in April, when FOMS volunteers Anne Jensen, Bruce Gotch, Bren Lay and Simon Lewis journeyed to Finniss Springs, managed by the Arabana. This was the first step in a major project to monitor the condition of springs near Hermit Hill – particularly springs with both reeds (*Phragmites*) and the endangered salt pipe-wort, *Eriocaulon carsonii*.

The FOMS contingent joined with Arabana personnel, SA Arid Lands Landscape Board officers and project leaders Rick Davies and Ben McCallum in preliminary planning and survey work for the project. (See more detailed report on this project later in this newsletter.)

Project leader Rick Davies (third from left) describing the work to the group.

May 2025: Main FOMS Working Bee

Twelve FOMS' members participated in the main working bee for the year. The main tasks were to assist with the springs monitoring project near Hermit Hill on the Finniss Springs Arabana land, fence maintenance and vegetation monitoring at fenced springs on the Peake pastoral lease and a range of tasks at the Peake Overland Telegraph site.

The view from the vehicle during the dust storm

FOMS' participants were Bruce and Sherrie Gotch, Colin Harris, Simon Lewis, John Tagell, Peter Harvey, Stafford Dow, Bernice Cohen, Erik Dahl, Martin Turner and Craig and Helen Whisson.

For some of the FOMS travellers, the trip got off to an interesting start, with a severe dust storm restricting visibility on the Jamestown - Orroroo road to near-zero. However, all arrived safely at Marree, meeting Arabana Aboriginal Corporation Project Officer, Neil Brougham.

The group then convened with the project team at Finniss Springs, comprising Arabana Rangers Hayden Stuart and Philip Stuart and Finniss Springs project leaders Rick Davies and Ben McCallum and volunteers Meg Robertson, Lois Padgham, Lewis Vaughan and Christina Vaughan. Head Ranger Zaaheer McKenzie and Ranger Tristan Stuart were absent due to illness, while Ranger Stanley Wingfield had other commitments at Finniss. The whole group spent the day surveying springs at Hermit Hill as part of the Finniss Springs Monitoring Project (see separate item in this newsletter).

Subsequently, Rick, Ben and their volunteers continued with vegetation monitoring at Hermit Hill, while the FOMS group, along with Hayden, Philip and Neil, headed up the Oodnadatta Track. Most of the group peeled off at Wabma Kadarbu Mound Springs Conservation Park to accompany Bruce in the servicing of the camera at Horse Springs. The springs were in reasonable condition – they have, in recent years, been subject to quite severe impacts from cattle entering the Park from neighbouring Stuart Creek Pastoral Lease. Camp was established for the next three nights at Levi Creek on the Peake Pastoral Lease.

Bruce and Martin servicing the camera at Horse Spring

The whole group at Finniss Springs. L to R: Stanley Wingfield, Ben McCallum, Neil Brougham, Hayden Stuart, Martin Turner, Erik Dahl, Lewis Vaughan, Philip Stuart, Christina Vaughan, Simon Lewis, Lois Padgham, Craig Whisson, Helen Whisson, Stafford Dow, Colin Harris, Rick Davies, Bruce Gotch, Sherrie Gotch, Peter Harvey, Bernice Cohen, John Tagell and Meg Robertson.

The ensuing two days were occupied with the following tasks, some undertaken by the whole group, others by subsets of the group:

- Checking the springs fenced by the State Environment agency in the 1980s: Outside, Twelve Mile, Fountain and Big Perry. The fencing was in reasonable condition, still functional in excluding cattle. Minor repairs were undertaken at the Fountain and Twelve Mile. Hayden and Philip assisted with the vegetation photo-point work and the Arabana Rangers may have a greater role in this work in the future. All of the springs continue to be dominated by *Phragmites*, although the *Phragmites* appears to be reduced in vigour in the centre of the spring vent at the Fountain.

- Visiting the fenced Tarlton Springs to check fencing and repeat photo-points. Tarlton Springs – formerly a group of *Typha* springs – became totally dry in the late 1990s and have remained so. The fencing at Tarlton was in reasonable, functional condition. FOMS has decided to maintain the fenced enclosure at Tarlton as a reference area.

Minor fence repairs at Twelve Mile Spring

- Checking fencing and repeating vegetation photo-points at Levi Springs, fenced by FOMS volunteers in 2019. The vegetation continues to recover well after a century or more of grazing impacts.

Phragmites spring at Levi at time of fencing (2019 above) and in May 2025 (below)

- Travelling to the Peake Overland Telegraph site to check the walking trails, mine-shafts and the recently de-roofed toilet. At one of the mine-shafts on the Copper Top Smelter and Mine Walk (established by FOMS in 2011), the protective fencing collapsed into the shaft in 2024. The other fenced mine-shaft is also in need of attention. Potential fencing alignments around the mine-shafts were measured. Structural problems with both the damaged roof and the masonry walls of the old toilet mean that quite a major repair job is needed, or just capping and stabilising the structure and leaving it roofless.

August 2025 Trip

The Friends of Mound Springs trip of August 2025 was an open-invitation event aimed at undertaking works at the Peake Overland Telegraph site and Strangways Springs, inspecting a number of springs near Kati Thanda – Lake Eyre South and servicing cameras at the fenced spring near Cheryl's Yard on Billa Kalina Pastoral Lease.

FOMS' participants were Bernice Cohen, Bruce Gotch, Simon Lewis, Brenton Arnold, Heatheranne and Peter Bullen, Jacqui Norton, Andrew Humpage, Sandy Dixon, Brian Wheeler, Brian Donaghy, Merilyn Browne, Gwen Mayo, Erik Dahl, Bren and Bis Lay, Geoff Axford. Colin Harris was a late withdrawal due to illness.

Given the large size of this group, it was decided to operate as two sub-groups with tasks undertaken as follows:

- Brenton, Geoff, Erik, Bernice, Bren and Bis to undertake works at the Peake Overland Telegraph site;
- The remainder of the party to undertake spring surveys further south in the vicinity of Kati Thanda - Lake Eyre South.

Work at Peake Overland Telegraph Site

At the Peake site, there are structural problems with the stand-alone toilet building at this State Heritage-listed site. The roof has blown off and a major crack has developed in one of the walls. Stabilising the wall was seen as the initial priority and the group installed an Acrow-prop to that effect, as well as re-directing local drainage away from the building.

Bren Lay testing the Acrow-prop at the old toilet while Geoff Axford, Bernice Cohen and Brenton Arnold look on

There are many unstable and crumbling walls at the site. The group had brought a second Acrow-prop and used it to prop up the separating wall of the old smithy building.

While on-site the group also replaced a map plate at the car-park and cleared back vegetation encroaching into the entrance path up to the site. Signs were also installed advising of the temporary closure of the walking trail leading up to the mine-shaft where the protective fencing has collapsed into the shaft.

Geoff Axford and Erik Dahl size up the completed propping work at the smithy building.

Spring Surveys near Kati Thanda – Lake Eyre South

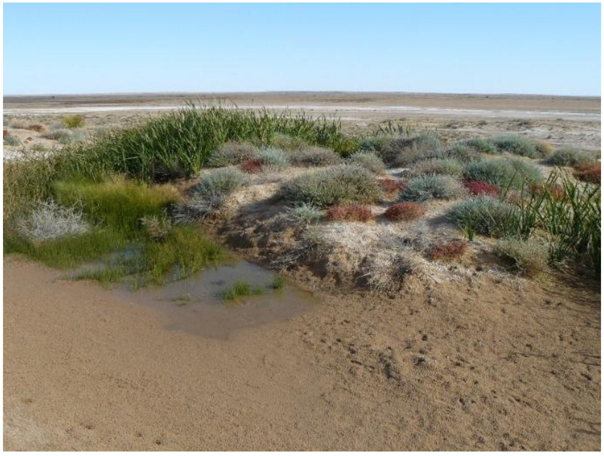
Gosse Springs: *Eriocaulon* thriving

There are three main springs at Gosse Springs. All were in good condition at the time of inspection. Of particular interest is the occurrence of the endangered salt pipe-wort (*Eriocaulon carsonii*) in the tail. The *Eriocaulon* – an endangered species - was translocated from Hermit Hill springs to Gosse Springs approximately 30 years ago.

Spring at Gosse Springs with translocated salt pipe-wort, *Eriocaulon carsonii*. Closer shot of *Eriocaulon* below.

McLachlan Springs recovering.

McLachlan Springs comprise several mounds. At the time of the previous inspection (2021), the main *Phragmites* mound had been severely impacted by feral horses. This time, no recent horse impacts were evident and the spring vegetation has recovered well. Of particular interest was what appeared to be a recently created spring vent, with fresh young growth of both *Phragmites* and *Typha*.



Spring at McLachlan Springs which appears to have emerged very recently

Main spring at McLachlan Springs: top photo, August 2025, showing recovery from horse damage (2021 photo, below).

Emerald Spring in good shape

This is a large spring with a tall mound and a good flow along an extensive tail. It has old fencing and trough remnants from the early days of stocking. The area was fenced more than thirty years ago by Western Mining but this fence collapsed in the damp, salty conditions. A replacement fence has since been installed by BHP and is still functional. The spring itself is in good condition. The vent has an inner area of *Typha* surrounded by a ring of *Phragmites*. *Typha* extends along the first thirty metres of spring tail with *Cyperus laevigatus* then occupying most of the spring tail, with fringing samphire.

Emerald Spring: section of extensive spring tail (above) and remnants of old trough structure (below)

Strangways Springs waning

Approximately fifteen years ago, FOMS volunteers conducted a comprehensive survey at Strangways Springs to identify active springs – those with water or damp soil present or at least supporting vegetation known to occur at springs. Eighty such springs were identified. While the August 2025 survey was not as comprehensive, it showed a significant reduction in the number of active springs since that earlier survey. It has been known for some time that the more elevated springs in this area have been in a state of decline and this inspection has confirmed that the trend is continuing. At this stage, FOMS has insufficient hydrogeological information to speculate about contributing factors.

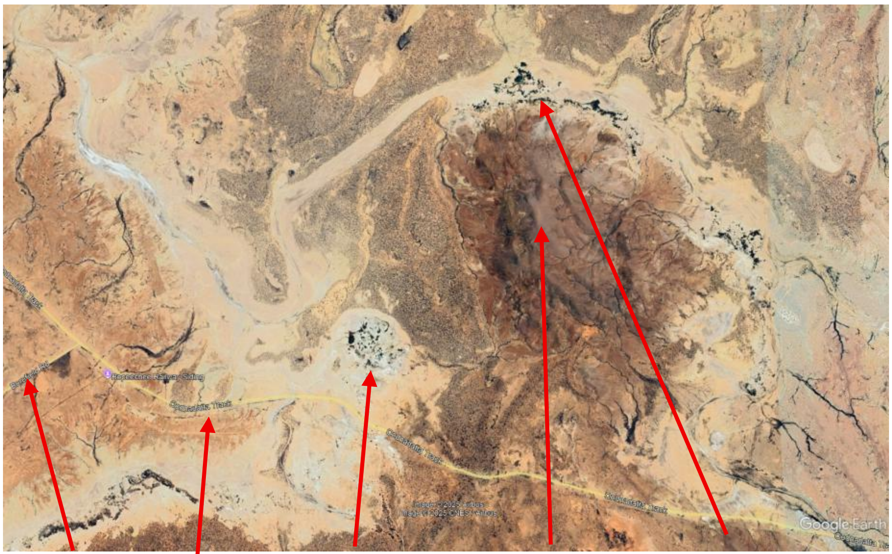
One of a diminishing number of active springs at Strangways Springs.

November 2025 Trip

In mid-November, FOMS members Colin Harris, Bruce Gotch and Simon Lewis travelled to Finniss Springs to witness the burning of three springs near Hermit Hill – chosen as part of the Finniss Springs monitoring project. More detail on this is provided in the next item in this newsletter.

Finniss Springs Monitoring Project progressing well

During 2025, there has been a very productive collaboration, involving FOMS, the Arabana Aboriginal Corporation and Arabana Rangers, the Threatened Plant Action Group, the SA Arid Lands Landscape Board and the Biological Society of SA, in monitoring and researching springs around Hermit Hill, on Finniss Springs Arabana land.



There are estimated to be 429 spring vents in the Hermit Hill Spring Group. Of particular biological importance is the occurrence of the endangered salt pipe-wort, *Eriocaulon carsonii,* which in South Australia is limited to only four locations – Hermit Hill, Public House / Petermorra Springs, Twelve Springs and a translocated population at Gosse Springs.

At Hermit Hill, destocking of the Finniss Springs lease in 1983 led to a proliferation of reeds, *Phragmites* – a process noted at many other springs where stock have been excluded after a century or more of stock access. One effect of the *Phragmites* proliferation was to push the *Eriocaulon* populations to the outer edges of the spring vents and to spring tails, to the extent that there has been concern about the future of the species at Hermit Hill. Early monitoring at the springs showed a reduction in the number of springs with *Eriocaulon*.

In 2002, Dr Rick Davies coordinated a project involving winter burning of three springs to assess the effect of burning on *Phragmites* and *Eriocaulon*. The conclusion was that winter burning had very limited effect, generating no particular competitive advantage for *Eriocaulon*. It was predicted that summer burning, combined with subsequent mechanical removal of *Phragmites* regrowth, might be more effective.

Late in 2024, FOMS received a grant from the SA Arid Lands Landscape Board for a project to repeat vegetation monitoring dating from the early 1980s at Hermit Hill Springs and to select springs for further burning trials. The project was led by contract biologists Rick Davies and Ben McCallum and was also designed to closely involve the Arabana Ranger team.

Typical landscape at Hermit Hill Springs

A reconnaissance trip to the Hermit Hill springs was undertaken in April 2025, involving Rick and Ben, FOMS, the Arabana Rangers and SA Arid Lands Landscape Board staff. Springs with *Eriocaulon* were identified and the monitoring techniques to be applied were refined and demonstrated to the group.

Example of *Eriocaulon* (bright green) at Hermit Hill

A larger group convened at the Hermit Hill Springs in May 2025 to undertake the more detailed monitoring work. Initially, the group split into four sub-groups to identify springs containing *Eriocaulon* and to estimate the cover of the various wetland plant species at those springs. This work was followed by more detailed transect and quadrat work coordinated by Rick and Ben over the following days.

Colin, Bernice and Bruce on the look-out for *Eriocaulon*

The monitoring work showed that *Eriocaulon carsonii* is still occurring on 26 mound springs in the Hermit Hill spring group, including one spring where it has not been previously found. It has largely disappeared from springs in the north western section of the group but large healthy populations still occur on more southern spring tails particularly in the western and eastern section of the group. Interestingly, *Eriocaulon* was noted at only 20 springs in 1983.

An important aspect of the May trip was selection of three springs – with both *Eriocaulon* and *Phragmites* – for burning trials in late spring – early summer, along with three other springs to be monitored as control sites.

The burning took place on 11th November 2025, with a sizeable group in attendance: the Arabana Rangers and other Arabana observers, FOMS and SA Arid Lands Landscape Board representatives and a Dieri Ranger. The windy day created some initial concerns but, fortuitously, the wind direction was favourable and the burning was completed successfully and, at times, quite spectacularly as illustrated in the accompanying photograph. The Arabana Rangers took the opportunity to burn several other *Phragmites* – dominated springs.

The next step in this project will be the mechanical removal of young *Phragmites* regrowth early in 2026 followed a repetition of this one-or-more times later in 2026. A key objective of this is to assess whether the burn followed by removal of regrowth will deplete the *Phragmites* plants to the extent that *Eriocaulon* will be able to increase in abundance.

Ranger Stanley Wingfield gets a burn under way

One of the more spectacular burns

The ash pile following the burn is expected to dissipate fairly rapidly

Eriocaulon in a burnt spring. The initial impression is that it has survived the burn

Management Planning under way for Dieri Country

In recent years, FOMS has been developing a closer working relationship with the Dieri people, whose country occupies a large area of land east of Kati Thanda – Lake Eyre. In 2024, FOMS had input to the program to fence Reedy Springs on Murnpeowie Pastoral Lease in Dieri country – a project funded and coordinated by the SA Arid Lands Landscape Board.

In 2025, the Dieri Aboriginal Corporation initiated a program to develop a clearer management framework for Dieri country. It is recognised that the conservation of mound springs is an important aspect of this and, in September, Colin Harris, Bruce Gotch and Simon Lewis joined in an online meeting to discuss springs that warrant priority in the planning process.

Some information is expected to be available for review and comment shortly and FOMS looks forward to having further input.

Billa Kalina Spring Grazing Trial strikes a hurdle

In early 2017, a grazing trial was established at a spring, near Cheryl's Yard, on the Billa Kalina Pastoral Lease. Fencing was installed with the intention of permanently excluding cattle from the spring pool but allowing occasional controlled grazing over part of the spring tail. Another section of the spring tail was completely open to cattle grazing.

During the return journey from the August mound springs trip, a small party visited the fenced spring in order to service the cameras installed at the site. A disappointing sight awaited them. A calf had breached the fence surrounding the spring pool and had severely impacted the area before perishing. An analysis of the camera data by Bruce Gotch showed that the calf had been active within the enclosure for about six months before perishing.

The project has therefore been seriously compromised as a monitoring exercise. This is not the first incident involving stock access to an intended exclusion zone and illustrates the risks associated with grazing trials in remote country.

The spring pool, intended to be a stock exclusion zone, in earlier undisturbed condition (left) and in August 2025 (right)

GAB Springs Monitoring Workshop held at Edgbaston Springs

In May 2025, Bush Heritage Australia hosted a workshop at Edgbaston Springs in Queensland. FOMS Treasurer, Dr Anne Jensen, participated on-line and provided the following summary.

The Edgbaston workshop brought together springs researchers and managers from across the GAB. The aim is to create an ecosystem health index report card for GAB springs based on standardised data. Currently, there is evidence of recovering pressure in the GAB but systematic data is needed on ecologic recovery in endangered communities, in order to develop GAB-scale springs health report cards.

Edgbaston has been identified as one of three sites with the highest artesian springs endemism in the world (Fensham, Ponder *et al*. 2024). Edgbaston Springs are the location of two nationally threatened fish – the Red-finned Blue-eye and Edgbaston Goby - as well as eleven types of snail.

Dean Gilligan reported to the workshop on his Churchill Fellowship to visit the two other sites in Mexico and the US, to look for useful lessons to apply at Edgbaston.

Edgbaston Springs

For the Mexican site, with major permanent pools in a desert environment and huge microbial diversity, the major threat is extraction for irrigation, with a significant additional threat from tourists staying in adjacent hotels and swimming in the pools. Other threats include grazing, litter and timber harvesting. The problems at the site highlight the need to reserve groundwater volumes to maintain groundwater dependent ecosystems.

The US site at Ash Meadows in New Mexico is four times the area of Edgbaston, with much higher groundwater flows. It is suffering severe degradation, with three known species extinctions. However, there is high biosecurity for part of the site, at the Devil's Hole underground cavern which has reservation status and a major associated research establishment, with extraction control enforced for that section of the springs complex.

There is a Springs Stewardship Institute in the US, which has developed a springs inventory protocol for ecosystem assessment and provides a repository for collecting data from all US springs sites.

Evaluations of Monitoring Methods

The workshop presented results from a 2-year research project which assessed various methods and indicators for wetland area, endemic plants, endemic invertebrates and endemic fish.

From workshop discussions of methods to assess springs plants, the order of preference was:

1. 20-minute field search recording presence/absence
2. Drones
3. Random quadrats
4. Grid-mapping

Drones need to be less than 20 m in height but can miss small species. Random quadrats under-estimate diversity. Grid mapping is intense but very useful long term.

It was recommended that risks should be ranked before commencing monitoring, to direct the focus of effort and design of monitoring actions. Four methods for monitoring fish were trialled, including underwater video and eDNA. It was noted that physical monitoring scattered fish around pools, making it hard to get an accurate count.

A summary of the discussions at the workshop will be collated and published.

More Information and Joining Friends of Mound Springs

More information about the Friends of Mound Springs, including additional contact information, can be found on the group's website *friendsofmoundsprings.org.au*. The website includes information on how to join the Friends group, with a modest subscription of $20 per household per calendar year.