Friends of Mound Springs Newsletter

Sunset at Levi Creek. Photo: Erik Dahl

PRESIDENT'S MESSAGE

The reports in this *Newsletter* will indicate that FOMS has had another very good year. The main field trip, held in mid-June, was particularly productive in carrying out a wide variety of tasks and investigations, despite some unavoidable setbacks with the trip logistics. Our thanks must go to all involved in the trip and to those involved in its planning, especially our indefatigable Secretary.

Another important project reported in these pages is completion of the fencing of Reedy Springs on *Murnpeowie Station* located on the Strzelecki Track northeast of Lyndhurst. This has involved FOMS in a cooperative effort with the lessees of the Station, the SA Arid Lands Landscape Board and the Dieri People and is a very good example of what can be achieved with the goodwill and cooperation of multiple interested parties.

In a similar vein, there is reporting on a significant project involving the Arabana Aboriginal Corporation and its Indigenous Ranger Team, FOMS, the SA Threatened Plants Action Group and the Biological Society of South Australia to look in some depth at the status and management requirements of the threatened Springs endemic plant *Eriocaulon carsonii* at Hermit Hill on the Oodnadatta Track.

Away from the field, our two general meetings have been well attended, our finances are in sound order and we are looking forward to another productive year in 2025. My thanks are extended to all of the FOMS' Executive for their help throughout the year and to the membership more generally for its continuing membership and support.

Colin Harris PSM
President, FOMS

In this edition we report on:

- **Protective fencing for Reedy Springs on Murnpeowie;**
- **Inspections on Murnpeowie and Moolawatana with further spring fencing in mind;**
- **The main FOMS' working bee of June 2024;**
- **A two-day survey of Hawker Springs, on the Peake Pastoral Lease;**
- **Monitoring and management planning projects at Finniss Springs;**
- **A safety concern on the Mine Walk at the Peake Overland Telegraph site.**

Spring Protection Program takes another step forward at Reedy Springs

Readers of previous FOMS' newsletters will recall that our group has been working closely with SA Arid Lands Landscape Board staff, Arabana and Dieri Indigenous representatives and pastoral managers in a program to protect important mound springs in South Australia. An important advance in this program was the fencing of Reedy Springs, on Murnpeowie Station, in May 2024.

An inspection of Reedy Springs was undertaken in mid-May by Landscape Board staff Aaron Smith, Glenn Del Fierro, Julia Short, Elisa Sparrow and Declan Morris, a number of Dieri representatives, Murnpeowie managers Frank and Joylene Booth and FOMS' members Bruce Gotch, Erik Dahl and Simon Lewis. The fencing contractor team also participated.

The purpose of the joint inspection was twofold. The first task was for the Dieri representatives to review the proposed alignment for the protective fencing and to provide final site clearance. Some adjustments were made to the alignment pegged in 2023 to include additional sites of significance. The second task was to set up a vegetation monitoring program for assessment of the response of the spring vegetation following stock exclusion. Board Ecologists Elisa and Declan took charge of this aspect.

The presence of the fencing contractors during this inspection meant that they were quite familiar with what was needed and the fencing was promptly completed by the end of May.

Portion of main mound included in subsequent fencing, showing recent cattle impacts

SAAL Board Ecologists Declan Morris and Elisa Sparrow record some baseline measurements

Portion of new fence at Reedy Springs

Gate and spear gate at Reedy Springs

Further Planning for Protection of Springs on Moolawatana and Murnpeowie

As part of the field trip to Reedy Springs (see above), the SA Arid Lands Landscape Board personnel and FOMS' representatives visited other springs on the Murnpeowie and Moolawatana Pastoral Leases that are considered to be a priority for protective fencing. These comprise Public House Springs, Twelve Springs and the mud spring at Mulligan Springs on the shores of Lake Callabonna. Public House and Twelve Springs are of particular importance due to the presence of the endangered salt pipe-wort, *Eriocaulon carsonii* and mound spring bladderwort, *Utricularia fenshami*, while the mud spring is thought to be one of only two such mud springs in South Australia.

Early planning is well under way for fencing of Twelve Springs, with a number of potential fencing alignments being considered. However, there are a number of steps in the process towards fencing, including site clearance by the Adnyamathanha First Nations people, and the end date for the completion of this fencing project is unclear.

Twelve Springs: *Phragmites* at vent surrounded by *Eriocaulon carsonii*.

Mat of *E. carsonii* at Twelve Springs

Mud Spring at Mulligan Springs

Public House Springs showing cattle impacts

Not quite so advanced is the proposed fencing of the Mulligan mud spring. Although FOMS members have previously inspected the mud spring and other Mulligan Springs, this May inspection was the first opportunity for Landscape Board personnel to see the spring. A potential fencing alignment was determined but it is still early days in terms of this fencing project. The mud spring is also on Adnyamathanha country and is somewhat difficult in terms of access.

Public House Springs contain an impressive array of mounds, many with *Eriocaulon carsonii* but with many also showing impacts from cattle. While some form of protection is highly desirable, virtually all of the springs are in a drainage line in rocky and undulating terrain. Fencing in this situation is highly problematic. There has been some discussion about installing very localised fencing / exclosures around individual mounds but further deliberation is needed about this.

FOMS Working Bee successful despite setbacks

The main working bee of the Friends of Mound Springs (FOMS) was held in good weather conditions from 11 to 17 June 2024, following some rain and road closures earlier in the month. FOMS participants were:

- Colin Harris, Kym Fullgrabe, Brendan and Elizabeth Lay, Jan and Bill Clifford, Andrew Humpage and Sandy Dixon, Bruce Gotch, Simon Lewis, Stafford Dow, Merilyn Browne, Erik Dahl and Masto Myles, Stuart Pillman, Trent Porter, John Tagell, Mal Simmons, Brenton Arnold, Bernice Cohen, Jacqui Norton (joining at Marree, Wednesday 12th) and Pattie Bryen (joining at William Creek, Friday 14th)

It was good to welcome Kym Fullgrabe, Andrew Humpage, Sandy Dixon, Mal Simmons, Jacquie Norton and Pattie Bryen, all attending their first FOMS working bee. The FOMS group was also joined by the Arabana Ranger team (Stanley Wingfield, Aamish Warren and Hayden Stuart) for part of the trip, along with SA Arid Lands Landscape Board staff Glenn (Del) Del Fierro and Tori Love.

Most of the FOMS group convened at the Leigh Creek Outback Resort for the evening of 11th June. All of the group except Pattie Bryen then gathered at Marree on the morning of Wednesday 12th. The group drove to Wabma Kadarbu Mound Springs Conservation Park, to be joined by Del, Tori, Stanley, Aamish and Hayden. There, two main tasks were undertaken:

- In the southern section of the Park are the ruins of the old Mt Hamilton Police Station. The ruins have been destabilised by vegetation growing though the ruins and some of this was cut back by FOMS volunteers many years ago. Colin and Bren led a small party to this site and carried out further trimming of encroaching vegetation.

- Also in the southern section of the Park, cattle have been encroaching into the Park from the adjoining Stuart's Creek pastoral lease and having a particular impact on Buttercup and Horse Springs. Motion-activated cameras were installed at these two springs in 2022 and these were serviced by a team led by Bruce – downloading of data, changing batteries. As shown in the accompanying photos, cattle are still breaching the Park boundary fence and impacting on the springs.

Bruce, Kym and Erik servicing the camera at Buttercup Spring

Cattle damage at Horse Springs

The group then spent the night in the Strangways dunes. During the evening Colin received news of a family health set-back, necessitating his return home, accompanied by Kym, the following morning.

Strangways Camp

FOMS Working Bee (cont'd)

On the morning of Thursday 13th, Colin and Kym began their journey south, while the remainder of the group split into two for the next few days.

One group, now led by Bren and Bis, spent the day at Strangways Springs. There, the tasks included maintaining the walking trails established by FOMS in 2011, oiling the Bill Giles commemorative bench seat at the Gibber View look-out, and excavating around the wheel at the Woolwash site to assess the condition of the below-ground portion of the wheel. FOMS has long held the view that additional information is needed to explain the operation of the Woolwash plant and one step in this might be to extract the wheel from its partly buried location and have it more clearly on display. However, the excavation showed that the underground portions of the wheel are in very poor condition and not fit for the display purposes envisaged. In addition to the above, the Arabana Ranger team checked the perimeter fence around the Strangways complex. This group had a second night in the Strangways dunes.

Del, Andrew, Bren and Bill check the Woolwash wheel.

Tori, Bill and Jan have a break while working on walking trail maintenance

The second group left Strangways early on Thursday 13th and headed to William Creek for refuelling. Then followed the drive up to the Peake homestead, then down station tracks to Levi Creek adjacent to Levi Springs. Levi Creek was to be the camp-site for the next three nights. During the afternoon, the group inspected Levi Springs, fenced by FOMS volunteers in 2019. The fencing was in good condition. Vegetation photo-points were also repeated and showed the continued recovery of spring vegetation following the fencing and stock exclusion.

Spring at Levi Springs showing strong recovery of vegetation (above) compared with 2019 (below)

On Friday 14th, the Strangways group broke camp to head to the Peake Overland Telegraph site after refuelling at William Creek when Pattie Bryen would also join the group. However, not far from Strangways, Bren and Bis suffered a serious vehicle breakdown, necessitating an eventual tow to Coober Pedy to await repairs. With Bren and Bis out of the equation, the Arabana Ranger team kindly took on a leadership role and guided the group to William Creek and then on to the Peake Overland Telegraph site. At William Creek, Pattie joined the group as planned and Del and Tori departed – also as planned – to head to Todmorden Station.

FOMS Working Bee (cont'd)

Meanwhile, the group based at Levi Creek spent a full day inspecting springs in the Hawker Springs group, about 10km south of Levi Springs. A report on the Hawker Springs survey is included as a separate item in this newsletter. Late in the day the news came through to the Levi Creek group about the enforced departure of Bren and Bis from the other group. Bruce kindly offered to drive up to the Peake Overland Telegraph site the next morning to bring the Peake group back to Levi Springs.

On Saturday 15th, Bruce headed off to the Peake Overland Telegraph site, while the rest of the Levi Springs group split into two. One sub-group returned to Hawker Springs to continue the spring survey work – this time approaching the springs from the south.

The second sub-group drove out to Tarlton Springs, a group of springs fenced by the State Environment agency in the 1980s. These springs, fed from local aquifers rather than the GAB, have all but dried up. Part of the fence has collapsed, while in other sections (drainage lines) vegetation is growing through and destabilising the fence. There has been discussion in recent times about the two options of (a) repairing the fence or (b) decommissioning and removing it, but it has been decided to retain and repair the fence as there is some chance that spring flows may re-commence and, in any event, retaining the area as a stock-free zone makes it a useful reference area. The FOMS sub-group repaired the broken section of fence and cut away the intruding vegetation.

Meanwhile, Bruce caught up with the Peake Overland Telegraph group at their camp-site and the group made a start on the planned activities. This work comprised maintenance of the walking trails, installation of an additional marker post on the walk to the cemetery and topping up the brochure supply. On the Copper Top Smelter and Mine Walk, it was noted that protective fencing at one of the shafts was now missing, having collapsed into the shaft (see separate item in this newsletter). An attachment to the main walking trail post has also broken off and needs to be repaired. It was also noted that the roof of the original (now disused) toilet has blown off and this was dragged away from the walking trail.

After showing the group the impressive North Freeling Spring, Bruce guided the group back to the Levi Creek camp-site and showed them the fencing at Levi Springs. At that stage the Arabana Ranger team continued south to William Creek for the night.

The remainder of the group had a final night at the Levi Creek camp-site. Although not planned that way in the original itinerary, it was good that most of the party could get together for one final night around the camp-fire and under the stars. This concluded an eventful but nevertheless productive working bee.

Arabana Rangers Stanley, Aamish and Hayden take in the view at North Freeling Spring
Photo: Andrew Humpage

FOMS has good look at Hawker Springs

Hawker Springs comprises the largest spring group in the Neales River spring complex in the Lake Eyre supergroup of springs, with 104 spring vents. The springs lie in the Hope Creek Paddock of the Peake Pastoral Lease, in a general depression east and south-east of Spring Hill.

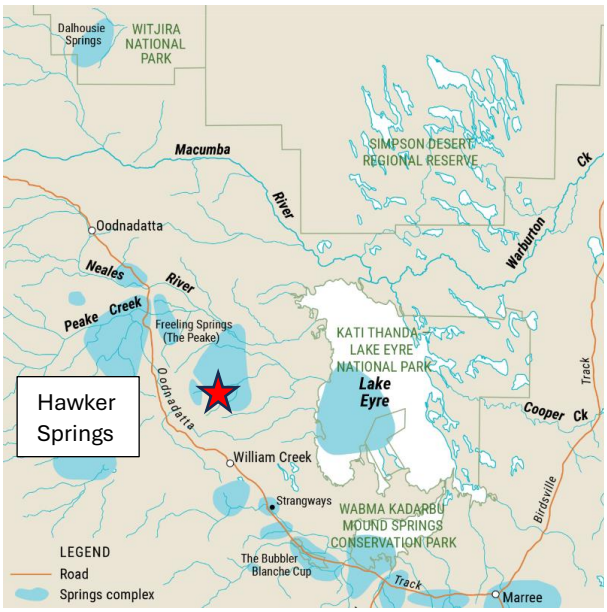
Hawker Springs have been subject to several surveys over the years but up-to-date information about the condition of the springs has been lacking. Friends of Mound Springs (FOMS) volunteers looked at a very small sample of Hawker Springs about six years ago but until now FOMS has had only a very limited appreciation of the springs.

In order to address this situation, FOMS undertook a two-day survey of Hawker Springs on 14 and 15 June 2024. Access was via a now disused, ill-defined and unmaintained station track from the north (near Levi Springs) and a similar "track" from the south, coupled with cross-country travel to visit as many springs as possible within the two-day period. A total of 37 springs were visited, as shown in the image on page 9.

Co-ordinates were recorded at each spring and the following observations made:

- Size of vegetated vent, length of spring tail;
- Species of spring vegetation and any weeds;
- Condition of spring;
- Other comments, such as invertebrates noted, presence of open water.

For the most part, Hawker Springs comprise low mounds less than two metres in height but with some up to five metres high and, conversely, some springs without any noticeable mounds. Vegetation composition mainly comprises wetland species commonly noted in the Lake Eyre supergroup of springs and elsewhere. For the 37 springs inspected the following species were noted: *Cyperus laevigatus* (8 springs), *C. gymnocaulos* (27), *Juncus krausii* (20),



Phragmites australis (8), *Typha domingensis* (5), *Gahnia trifida* (8), *Myoporum montanum* (20) and *Sporobolus virginicus* (20). Of these, the most significant occurrence is that of cutting grass, *Gahnia trifida*, which does occur at other springs (eg Francis Swamp, Strangways) but is described as a disjunct species as the nearest other populations are hundreds of kilometres away to the south. The springs were generally fringed by samphire (*Halosarcia* sp.) with some *Nitraria* and *Acacia victoriae*. No weeds were noted.

The locations of the *Gahnia* springs are shown on page 9.

Typical example of many springs at Hawker Springs

FOMS at Hawker Springs (cont'd)

One of the *Gahnia trifida* (cutting grass) springs

Main E-W drainage line through Hawker Springs

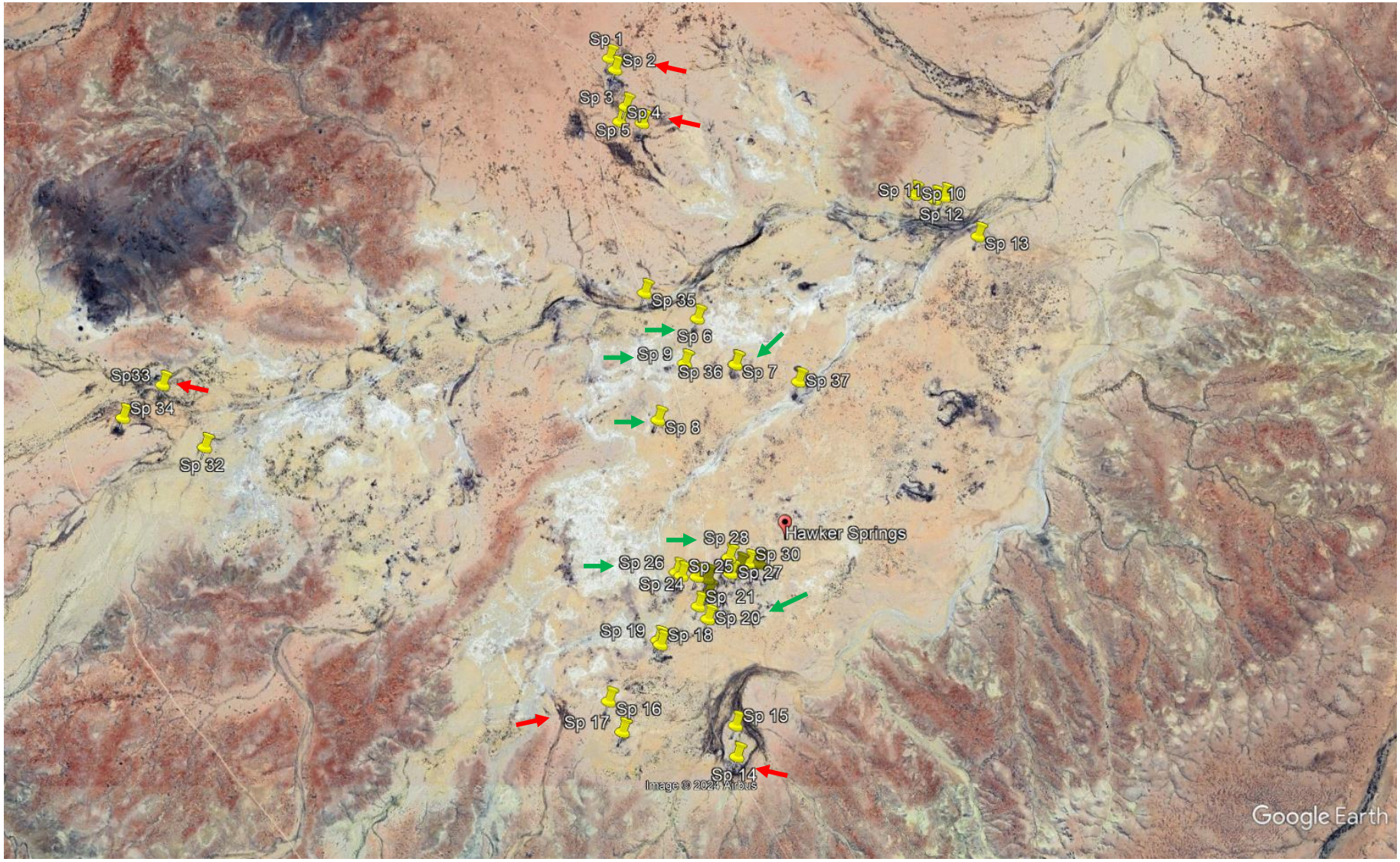
Twenty-one of the springs were in very good or only slightly disturbed condition, with that disturbance caused by cattle intrusion. Seven of those 21 springs showed no evidence of cattle impacts. At the other end of the scale, five springs were moderately to severely affected by cattle, with heavy pugging and loss of wetland vegetation. As shown on page 9, those five springs were on the outer edge of the spring group, lending weight to the hypothesis that, in a large, concentrated group of springs, cattle impacts will tend to be more severe on outer springs in the group. Interestingly, two of those more impacted springs (2 and 14) had remnants of timber, metal and stone structures, including troughs, indicating that they were focal points for stock watering in the early days of pastoralism. A number of cattle were seen on Spring 14 during the inspection.

Overall, the coverage of the Hawker Springs survey is considered to be quite good, with a good cross-section of the spring group from north to south and a partial cross-section from east to west. The main gaps were springs in the central west of the group, likely to be difficult to access, and two to four large springs in the south-east of the group, which might be accessible from the vicinity of Springs 14 and 15.

Spring on southern edge of Hawker group heavily impacted by cattle

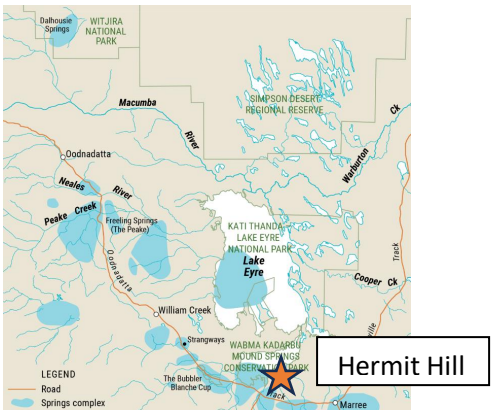
Remnants of trough at same spring. This spring is one of the stronger flowing in the Hawker group and clearly has a long history as a focus for watering of cattle.

Hawker Springs: showing inspected springs (yellow); *Gahnia* springs (green); and springs heavily impacted by cattle (red)



Funding Secured for Collaborative Springs Monitoring Project

The Friends of Mound Springs, in consultation with the Threatened Plant Action Group, Arabana Aboriginal Corporation and Biological Society of SA, have secured a grant of just under $20,000 through the SA Arid Lands Landscape Board's Grassroots Grants Program to conduct detailed monitoring of springs in the Hermit Hill area.



The springs surrounding Hermit Hill on the Finniss Springs Arabana land have attracted a good deal of attention over several decades. This spring group is substantial, with an estimated 933 active springs, and is of particular scientific interest due to the occurrence of the salt pipe-wort, *Eriocaulon carsonii*.

The common reed, *Phragmites australis*, is present at most of the springs and, with cessation of cattle grazing in the 1990s, *Phragmites* has proliferated to the detriment of *E. carsonii*, the distribution and abundance of which has declined.

These and other springs on Finniss Springs Aboriginal Land were monitored by botanist Tim Fatchen from 1983 to 1999. Subsequently three springs were burnt in winter 2002 by Arabana elders working in partnership with then PhD student Rick Davies, who monitored the effect of the burns.

Consultant botanists Dr Rick Davies and Ben McCallum will train and mentor Arabana Rangers to repeat this monitoring of the springs using the methodology applied by Tim Fatchen. The Arabana Rangers will be assisted by volunteers from the Friends of Mound Springs, Threatened Plant Action Group (TPAG) and the Biological Society of SA (BSSA). The three springs burnt in 2002 (and three comparable unburnt control springs) will be monitored by the Arabana Rangers, using Davies' methodology. Similar monitoring will be set up on six springs, three of which will be chosen by Arabana elders, for summer burns and follow-up slashing/chaining.

All monitoring will be undertaken in consultation with SAAL Landscape Board ecologists to ensure that consistent monitoring protocols are applied. Data collected will be collated and analysed by Rick Davies and the results presented as a report, as well as presentations at meetings involving the Arabana rangers, the Arabana community generally, and members of FOMS, TPAG and BSSA. This project will feed information into the management planning work described in the next item.

Hermit Hill Springs: general setting

Ericaulon amongst reeds and sedges at Hermit Hill

Management Planning under way for Finniss Springs

As noted in the previous item, the Finniss Springs Arabana lands contain a large number of springs that are highly important from both a cultural and ecological viewpoint. These springs have received a considerable amount of attention (vegetation monitoring, burning trials etc) and factors affecting the health of the springs have been identified (eg uncontrolled horses, water draw-down from artesian bores). However, a plan for ongoing management of the springs has not yet been established.

The group inspecting Beatrice Spring

The Arabana Aboriginal Corporation wishes to establish a clearer management framework for springs (and bore-fed wetlands) on Finniss Springs. An inspection of Beatrice and Bopeechee Springs and springs around Hermit Hill was conducted in mid-October, involving the Arabana Ranger team, several Arabana Elders, Arabana Project Officer Neil Brougham, SA Arid Lands Landscape Board staff Aaron Smith and Julia Short, and Bruce Gotch and Simon Lewis from FOMS. Despite the challenging weather conditions – temperatures up to 43 degrees and strong winds – the sites were visited and productive discussions ensued.

Two main management options were discussed. The first is fencing of priority springs to exclude horses. The second is to remove horses entirely from Finniss Springs, in which case fencing of springs would not be needed as there are no other herbivores significantly impacting on the springs. While some Arabana Elders supported total removal of horses from Finniss Springs, this was not a clear consensus so further consideration is needed.

As noted in the previous item in this newsletter, a further management issue is the management of the springs where reeds (*Phragmites*) have proliferated to the detriment of significant species such as *Eriocaulon carsonii*. It is generally agreed that burning trials and ongoing monitoring are needed to clarify longer term management requirements.

A related issue for Finniss Springs is the management of artesian bores, particularly Charles Angas and Cooryabbie Bores. These bores are controlled but some flows have been maintained in order to sustain the wetlands associated with the bores. Maintaining the flows may have some impact, albeit small, on natural springs in the vicinity, thus prompting an argument that the bores should be shut down. Counter to this, it is also possible that these artificial wetlands are providing useful habitat, such as for water-birds. As is often the case, the challenge is to get the balance right. At this stage, there is a suggestion that the bore flows should be reduced (but not shut down completely), with monitoring then undertaken to assess the wetlands and their habitat values.

Cooryabbie Bore: the current flow supports a small wetland.

This management planning project is still at an early stage and FOMS looks forward to providing further support in discussion with the Arabana and SA Arid Lands Landscape Board personnel.

Collapse of Mine Shaft Fencing raises concerns

As noted in the report on the June working bee, a serious safety hazard has arisen on one of the self-guided walks installed by FOMS in 2011 at the Peake Overland Telegraph site. Along the Coppertop Smelter and Mine Walk, there are two mine shafts which – until recently – were protected by chain-mesh fencing. However, at one of these shafts, the fencing has now collapsed into the shaft, creating a significant hazard for visiting walkers. FOMS has been in contact with the Department for Energy and Mining (DEM) about installation of a new fence and, subsequently, the SA Arid Lands Landscape Board has also taken the matter up with DEM.

This hazardous situation has not yet reached a resolution so, as an interim measure, barrier mesh has been installed. Initially, some mesh was installed by Peake Manager Cameron Williams. Subsequently, the Arabana Ranger team has completely surrounded the mine shaft with barrier mesh.

The latest information on this issue is that DEM, in responding to the Landscape Board's approach, is arranging an inspection of the site. FOMS will continue to liaise with relevant parties about restoration of more permanent protection at this site. A specific aim will be to have protection in place before visitor numbers start to rise again in Autumn 2025.

Mine-shaft #1: the fence has collapsed into the shaft

Mine-shaft #2, fence still intact

Arabana Rangers installing barrier mesh, October 2024

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.