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Originated by: "Mark and Bindy" <actis@iinet.net.au>  
Cc: Jim Lane@BUSS.SID@CALM  
Subject: fwd: [Fwd: Lake Minigwal]  
Attachment: Lake Minigwal.doc, Frank Batini Lake Minigwal.doc, L Minigwal  
and Callitris glaucophylla.jpg, L Minigwal and Halosarcia  
Angelfish Island.jpg, L Minigwal and Shinglebacks.jpg, L  
Minigwal Island.jpg  
Date: 19/Oct/2000 8:04 AM

Ian,

Here is the stuff email and info on Lake Minigwal from Bindy Davey. Would you like to reply to her, particularly as she was very complimentary about Mount Elvire?

Jim, this for your information.

Cheers,  
Rob.

Rob Thomas  
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----- Original Text -----

From: "Mark and Bindy" <actis@iinet.net.au>, on 18/10/2000 5:10 PM:  
To: Robert Thomas@como.fep@CALM

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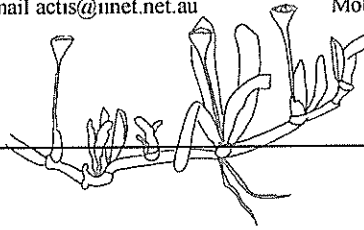
If you have received this message in error, please email or telephone the sender immediately.

# actis

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September 26, 2000

Frank Batini  
CALM

Re: Lake Minigwal

Dear Frank,

On our travels while on consulting business we came across a lake that we thought worthy of CALM's attention.

Lake Minigwal so far appears to have escaped the attentions of the mining world – hopefully there is no gold there! We were much taken with the lake and its environs as it appeared to us to be nearly pristine (especially when compared with Lake Carey, which we have had quite a bit to do with).

We understand that CALM buys abandoned stations and protects those lands. Mount Elvire is an example of the good work that CALM is doing to protect Lake Barlee. Lake Minigwal is special in that the playa is not composed of red clay/sand laced with gypsum crystals (as are most of the Goldfields lakes), but appears to be a homogenous grey kopi. We feel that it is different enough to be protected in some way.

I have attached a write-up of Lake Minigwal and some photos.

Regards,  
Bindy Davey

September 26, 2000

## Lake Minigwal, Northern Goldfields, Western Australia

Bindy Davey

Lake Minigwal is a large salt lake in the northern Goldfields of Western Australia. A rough estimation of the continuous surface area of Lake Minigwal is 300km<sup>2</sup> of lake playa, containing many islands.

The Minigwal lake system covers an area of roughly 1800km<sup>2</sup>. This includes the main lake playa and the myriad pans and smaller playas surrounding Lake Minigwal.

The main playa peters out to become strings of pans in 3 prominent arms, the longest of which encompasses Lakes Lightfoot, Balpe and Hope Campbell, penetrating northwards before disappearing beneath the Great Victorian Desert in the Eucla Basin.

Lake Minigwal is at the southern end of Lake Carey and is also part of the Carey Palaeodrainage system. Because the water in this palaeodrainage system is slowly moving southward, one would assume that water from Lake Carey eventually passes through or beneath Lake Minigwal on its way to the Eucla Basin. Anecdotal evidence suggests that in large rain events such as Cyclone Bobby, the area between Lake Carey and Lake Minigwal floods with water, joining the two lakes, however in the normal course of events the two lakes are not joined (on the surface, at least). There is not even a continuous Samphire flat between them.

Lake Carey has been a focus of attention in recent times due to the number of mines opening and closing on its shores. Prior to the last 5 years not a lot was known about the large salt lake playas in the northern goldfields. Fears (expressed by both many of the mining companies and of regulating bodies) of cumulative impacts on Lake Carey have lead to a number of studies being carried out to gain a better understanding of these lakes and their functions. Lake Carey has been mined on and off since the beginning of the century so it is reasonable to assume that there would have been some impacts in this time.

Lake Minigwal however, does not seem to have received the same attention (from mining companies) as Lake Carey and appears to remain relatively pristine. One sign that it hasn't had the same focus of attention is the lack of exploration tracks normally seen around Lake Carey (though a new track has been bulldozed through from Pinjin Station).

It could be expected that Lake Minigwal would be very similar to Lake Carey, as it is in close proximity and in the same Palaeodrainage system, however although there are some similarities, there are also as many differences.

The first visual difference is that the playa is chocolate brown from a distance, instead of Lake Carey's reddish tones. Another is that trees and shrubs at Lake Minigwal grow comparatively close to the playa edge, whereas at Lake Carey the trees and shrubs, apart from the halophytes, grow further back. There may be many reasons for this; human impact, domestic sheep and cattle grazing, feral animal grazing, less rainfall and less fresh water run-off at Lake Carey may all play a part.

The lake playa at Lake Minigwal is of a coarse gypseous material (kopi). The surface is brown (probably from windblown dust and from algae) and in most areas lifted in 'blisters' apparently caused by algal growth about 1cm below the surface. The gypseous material under this algal layer is greyish, and rather like coarse wet talcum powder. There is no gypsum crystal layer as there is at Lake Carey, the kopi appears to be continuous to some depth. Even

though the water table appeared to be only 10cm to 12cm below the surface of the playa, at no time did the four-wheel motorbike used for this survey become 'bogged'. There was no salt crust on the playa, even though the ground water beneath the lake was near salt saturation (240 ppm). In some parts the playa was harder than elsewhere.

Lake Minigwal (like Lake Carey) is an inflation/deflation basin, though because of its unusual shape and the fact that it lies in an east/west direction, it is not as easy to see the resulting steep western shore and flatter eastern shore as at Lake Carey. The islands on the lake are mostly gypseous deflation islands with hard calcrete/gypsum caps, or lower inflation islands of wind and water driven coarse sandy gypseous material. Generally speaking, the islands at Lake Minigwal are not as high as at Lake Carey.

As stated before, the non-halophytic trees and shrubs (for example, Eucalypts) grow closer to the playa edge than at Lake Carey. As Lake Minigwal is quite a few kilometres south of Lake Carey, there is a high probability that this area gets a higher rainfall than most of Lake Carey. This is reflected in the species of the local vegetation. Eucalypts were more common than at Lake Carey. The species *Eucalyptus youngiana* was quite common, and the vegetation to the south of the lake was of the sand plain type with *Hakea multilineata* (?) as a common species.

There have been fourteen species of Samphire identified at Lake Minigwal, one from the Genus Sclerostegia and thirteen from the Genus Halosarcia, of which the Priority One species Halosarcia 'Angelfish Island' is one.

The lake playa displayed evidence of the local wildlife – tracks of emus, camels, dingos and kangaroos crisscrossed the lake in all directions. Many flocks of Budgerigars were also seen.

At the southwestern side of Lake Minigwal is an abandoned Homestead, named 'Elora' on the map. There is not much left of the old homestead itself – storms have scattered tin, tanks and old machinery across a wide area, however there are still remains of the homestead floor and the stock yards.

Lake Minigwal can be seen on the 1:250,000 DOLA Maps 'Edjudina' and 'Minigwal'.