

Beaconsfield Reservoir or Ponds?



A 100 years and onwards—see article on page 6

Above: Melbourne Water employee Mark Arnold discussing options for the future of the Reservoir. Below: Laborious construction in 1918 by horses and men alone. Right: Harry and Florence Albers on the inflowing aqueduct.



Below: Drainage for repairs in 1987. The newly proposed major pond is planned to be about two metres deeper than the image depicts. The rehabilitation of such a large area will need to be fully funded and delivered.



Alternatively the dam wall could be re-strengthened and a large body of water will remain covering this broad area. For more information contact BNCR Friends Group—Paul Higgott: paulhiggott@gmail.com CEC Public Land Manager—Geoff Lookwood: info@cecinc.net.au

Beaconsfield Reservoir or Ponds?

An interesting geology

The Beaconsfield Reservoir lies in rock layers formed 425 million years ago in the Silurian geological period as silt and mud stone deposits. At that time the first land plants were appearing on Earth. This layer was overlain with more rock, probably sediments.

About 405 million years ago a magma bubble (molten rock) rose from the Earth's crust to meet the now buried Silurian sediments. The bubble's southern border was directly in line with Salisbury and St Georges Roads, and stretched to Lysterfield, Emerald and across to Pakenham Upper. The mineral content and cooling time determined that the magma cooled into a solid rock called granodiorite. Whilst cooling the super heated water content of the magma permeated into the Silurian sediments to its south. In this water were minerals such as quartz and gold!

Over geological history, wind and water have eroded the granodiorite to the present day surface. The softer Silurian sediments to the south have large valleys carved out of them by this erosion. One of them was named for reasons unknown 'Haunted Gully', and it contains Beaconsfield Reservoir.

Gold fever!

Gold prospectors naturally had an interest in the alluvial deposits of Haunted Gully. In the early 1870s, gold was first found in the gully, and at its peak attracted about 200 miners. Many broad shafts were sunk first to get to the alluvium, and then wooden rockers and pans were used to separate out the shiny specs of reward. Some shafts may have been dug in the hope of finding a quartz reef – a big injection of quartz with maybe gold nuggets as well – to no avail. With 500+ ounces extracted from the area, mining hopefuls stayed active for two decades. A large economic depression in 1890s boosted the last few years of activity, from those with little else to do.



Circular pits—probably the work of previous gold miners.

A land rush

Section 49 of the 1869 Land Act made 20 acre blocks of land available in the form of a Goldfield Residence and Cultivation Licence. After a stipulated period (2-2½ years)

and provided simple improvements were made (fencing and some clearing of the property), the land could effectively be bought from the government at £1 per acre.

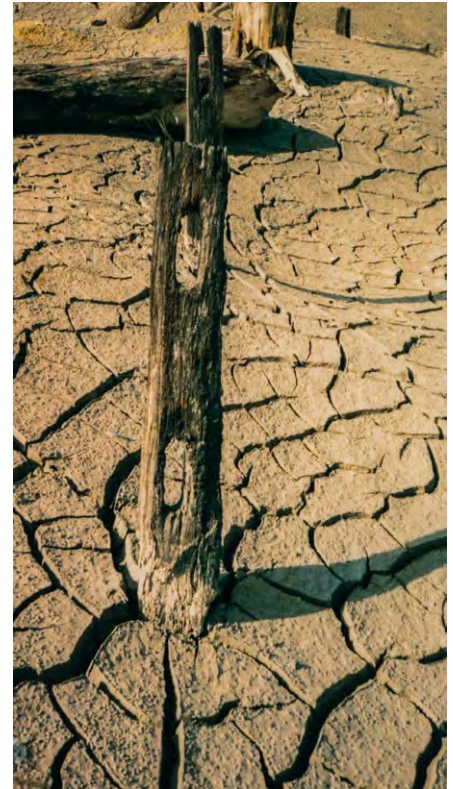
Unlike other land licenses, the licensee did not have to build a permanent residence, nor live on the property—perfect for Melbourne based speculators. By 1876 Haunted Gully was divided into such 20 acre blocks, as were great tracts of Upper Beaconsfield.

It is interesting to note that in Haunted Gully a 30 acre block with prime creek frontage was temporarily withheld from sale and was banned to miners, being designated as a reserve for public watering purposes.

Mornington Peninsula needs a water supply

With all the blocks selected, and none of them containing residences, that is how Haunted Gully remained until World War I. By then it was decided that Flinders Naval Depot (now HMAS Cerberus) and Flinders Naval Base, required a reliable source of water. Both were getting water shipped in. As the dry Mornington Peninsula offered no solutions, Haunted Gully was chosen as suitable site for a reservoir. With a minimum of fuss, seventeen basically empty 20 acre blocks were compulsorily acquired. The speculators had not seen much joy from their investments after the 1890 property crash. There was enough space for the body of water and most of the down slopes surrounding it as a buffer. Work began in 1917. The earthen dam wall material was laboriously sourced by horse drawn scoops. They dragged down the material needed, thus widening and deepening the gully at the same time. The completion date was 1918, a time of national urgency. It is doubtful that any of the workers had time to be involved in any serious gold prospecting on the side.

Initially the head waters of the Toomuc Creek were re-channelled by an aqueduct (with some tunnels) to the new 'Beaconsfield Reservoir'. Over the 20th century, as demand for the reservoir's water increased from civilian growth areas on the Mornington Peninsula, the aqueduct was extended to the Bunyip River, then to the Tarago River. When the Tarago was dammed, greater volumes of water were sent down an ever improved aqueduct system to Beaconsfield Reservoir.



Remnants of an old post-and-rail fence

Some of the work was done by men working in return for sustenance as a result of the 1930s Great Depression.

By the 1970s the usage of the reservoir hit its peak. On its western arm was a pipeline feeding the Berwick and Harkaway water towers, and on its way the stand pipe on Emerald Road north of the Cardinia Hotel. This sated the thirst of many Upper Beaconsfield residents in dry times back then before water reticulation. Also westwards was a pipeline feeding the Lysterfield Reservoir which serviced areas such as Carrum, Chelsea, Noble Park, Springvale and Dingley. The reservoir's southern outlet watered Cranbourne, Hallam and the Mornington Peninsula.

Decommission of Beaconsfield Reservoir

In the early 1980s, the completion of the Cardinia Reservoir also saw a massive six pipeline outlet run down west of the Cardinia Creek down to Berwick, and beyond. These works spelt out the future of how water would be supplied to Melbourne's outer south-east and the Mornington Peninsula. New pipe works effectively joined the Tarago and Cardinia Reservoirs. The newly created Melbourne Water authority decided to decommission the Beaconsfield Reservoir Network in 1988, citing that aqueducts no longer conformed to modern water safety standards. The buffer areas to the reservoir became crown land.

An early move to sub-divide and sell some of the land at the time of the Kennett Government was successfully quashed by a fierce community backlash, and there was a fresh look at the area when there was a change of government. The area is now named the Beaconsfield Nature Conservation Reserve (BNCR) and is managed by the Cardinia Environment Coalition (CEC) on behalf of The Department of Environment, Land, Water and Planning (DELWP). An active friends group of interested locals also provide a strong voice for the BNCR's future, and has the support of the CEC. With little weed infestation, the overall area is regarded as of high conservation value. Melbourne Water manages the old water supply infrastructure—and is liable for any uncontrolled releases of water.

Proposed refurbishment

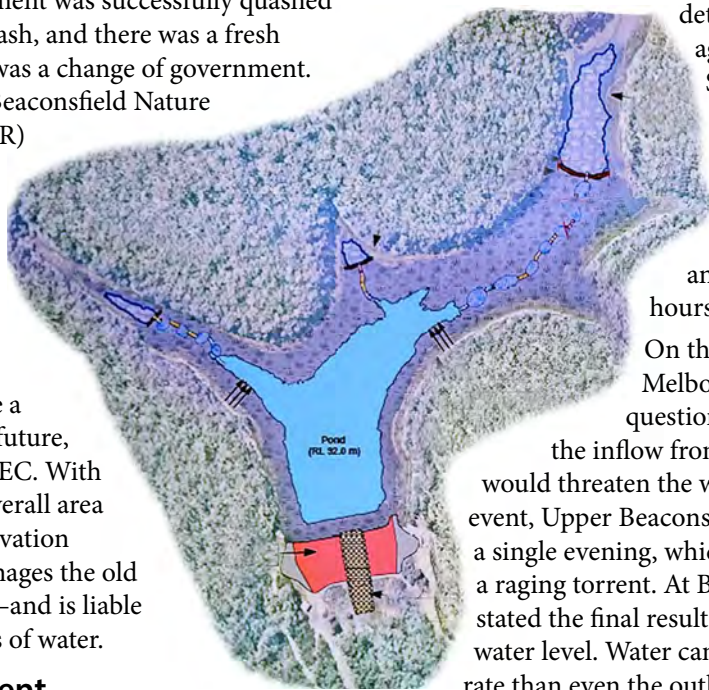
A 'Community Update' released this year on a planned refurbishment of Beaconsfield Reservoir by Melbourne Water generated a strong public reaction. On 7 June the Upper Beaconsfield Association (UBA) hosted speakers Kristen Sih (Melbourne Water) and Geoff Lockwood (CEC). Kristen Sih explained that the dam wall is 100 years old, and the water is presently kept at a low capacity. Melbourne Water operators, and a dam surveyor regularly check the wall, and say they have questions about its stability and seepage rates. This affects the viability of maintaining a

modestly large, single body of water there. When questioned later on the data, Melbourne Water stated that it had chosen to maintain this data as privileged information.

The speakers then presented a sweeping new proposal for the area, in line with DELWP's overall management strategy. It involved removing most of the dam wall, and creating a running natural wetland environment with a chain of ponds over the distance of where the present body of water lies. A much lower wall would change the area to a retarding basin. Geoff stated that there was an available funding source to help with the restoration work. Opening the park for visitors depended on this plan going ahead.

When a show of confidence in the plan was called for, many at the meeting were not happy with Melbourne Water's assertions that the wall was unsafe and had to be scaled down. Drawbacks included that Cardinia Shire would lose the amenity of a beautiful major water body. Also the ponds may dry out in a drought. If so, CFA firefighting helicopters operating in the immediate area would not have the opportunity of using an otherwise permanent lake as a water supply.

In an effort to access Melbourne Water's dam wall data, the BNCR friends' group put forward a group of locals with extensive civil engineering experience to examine the data and pass on an informed view about it to the local community, without breaching confidences on specific details. Melbourne Water has agreed to such a meeting on 5 September.



A diagram of one of the refurbishment proposals Melbourne Water has presented.

Open Day

Following the interest at the UBA meeting, CEC and Melbourne Water arranged an open day at the BNCR. Over 6 hours there were 177 visitors.

On the dam wall, Mark Arnold from Melbourne Water helpfully answered questions. One question was whether the inflow from a major rain/storm event would threaten the wall? In 2011 during a La Nina event, Upper Beaconsfield had a 180 mm deluge in a single evening, which turned Stoney Creek into a raging torrent. At Beaconsfield Reservoir, Mark stated the final result was a 1½ metre rise in the water level. Water came into the reservoir at a faster rate than even the outlet pipe could release it. If

Melbourne Water is not happy with the wall's stability at its present low level, it would be more troubled with waters staying at higher levels. Once again the public needs to see the figures, to evaluate whether such water levels are problematic.

Some local engineers had data of what kind of rain event would be needed to fill the reservoir, so that the spill-way at the east side of the wall would come into play, which Mark pointed out was in a pretty degraded condition. Their figures were conservative in that there was no consideration for

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water soaking into the ground, and stated that a cyclone would have to hit Melbourne to generate the necessary rainfall to fill the reservoir.

Mark explained that in 2011, Brisbane had a day of rain equivalent of a 1 in 200 year rain event, and then had a similar quantity of rain the next day. Reservoirs initially well below their capacity in two days had their flood gates open, unfortunately causing the 'inland tsunami'. He said there are 1 in 200, 400, 600, 1,000, and 10,000 year rain events and it is difficult to predict when they might happen. With old dams busting recently worldwide, engineers have to be very conservative.

Another option Mark presented would be for Melbourne Water to render the wall with more earth and rock, with built in drainage layers to bring it up to their engineering specifications. To give us an idea of the cost, several years back it was costed at about \$4 million.

Should all presently discussed parameters stay in place, the local community will have to lobby hard for these rendering works in order to maintain a large body of water at Beaconsfield Reservoir, if that's what the community wants.

Should you wish to offer support to the BNCR friends group contact Paul Higgott 0408 732 507 paulhiggott@gmail.com. The CEC can be contacted on info@cecinc.net.au and Melbourne Water on beaconsfield@melbournewater.com.au

CAMERON ROCKE

Photographs of drained reservoir (incl. on page 2) from Stan Hamilton's collection.

What do you think the future should hold for Beaconsfield Nature Conservation Reserve?

Recently I met with several residents at the reserve to discuss their concerns about Melbourne Water's proposal to lower the water level in Beaconsfield Reservoir.

Beaconsfield Reservoir was constructed in 1918; it was removed from the water supply network in the early 1990s. While no longer providing water to Melbourne, the reserve is a scenic feature of our community, home to significant flora and fauna.

Following a risk assessment of the dam, Melbourne Water planned to lower the water level in the storage, reduce the height of the dam and create a wetland environment incorporating a chain of ponds.

A number of Upper Beaconsfield residents hold concerns about plans to lower the water level. Many believe it is counter-intuitive to remove a water resource, where firefighting helicopters could potentially draw water, from an area of high bushfire risk.

I have written to the Minister for Water, Lisa Neville MP, the Minister for Environment, Lilly D'Ambrosio MP, and the Minister for Emergency Services, James Merlino MP on these concerns. To date, no Minister has responded.

I would like to acknowledge Elizabeth Fraser, Geoff Lockwood, Paul Higgott and Harry Jensen for their advocacy in relation to the Beaconsfield Nature Conservation Reserve.

I have raised this issue in Parliament and will continue to do so until Ministers respond to my requests for information.

If you would like to share your views on the future of Beaconsfield Nature Conservation Reserve, please contact me on brad.battin@parliament.vic.gov.au, by phone on (03) 5953 0216, or via bradbattin.com.au

BRAD BATTIN MP MEMBER FOR GEMBROOK
Shadow Minister for Emergency Services
Shadow Minister for the Building Industry

Walk to The Wall

Pristine beauty
Majestic tree trunks reach skyward
Sunlight shafts
Play between straight timbers
And form sparkling diamonds
On rippling water

Earth underfoot, musky, damp
Leaves rustle above, breeze crisp and cool
A single bird yellow and grey
Pecking busily at a rotting log
Flies off without a cry
At my approach

"You can see The Wall from the point"
A fellow traveller advises
A wooden seat, overlooking the water
Directs one's gaze to The Wall
Of soil and rock
Rising up in the distance beyond

Then on,
The path sometimes barely defined
Up and down
Across the moist creek bed
Slippery—shade, ferns and moss
People meet unexpectedly in unexpected places

From high to water's edge
Reeds line the bank
Voices—distant—the only noise—human
And then suddenly, the Fairy Dell
A clearing of spongy green
Ferns around and a feeling of magic

The track meanders—
Find pink ribbons to guide
More seats, more views
Through scrub, mud, over rock
Keep feet safe from the holes
No animal in sight

Then through the trees
The Wall is close
People astride
Find foothold in its rocky face
And clamber to the top
...at last

And see from the narrow path
Moss and dirt on a steep slope
From the outer earth wall
Compact and stable
A living heritage
To a decommissioned reservoir

And nature knows
That humans destroy
All that is sacred
Flora and fauna wait silently
In limbo
Their own fate, as do the wall and the water

WRITTEN BY JANINE BASTERFIELD