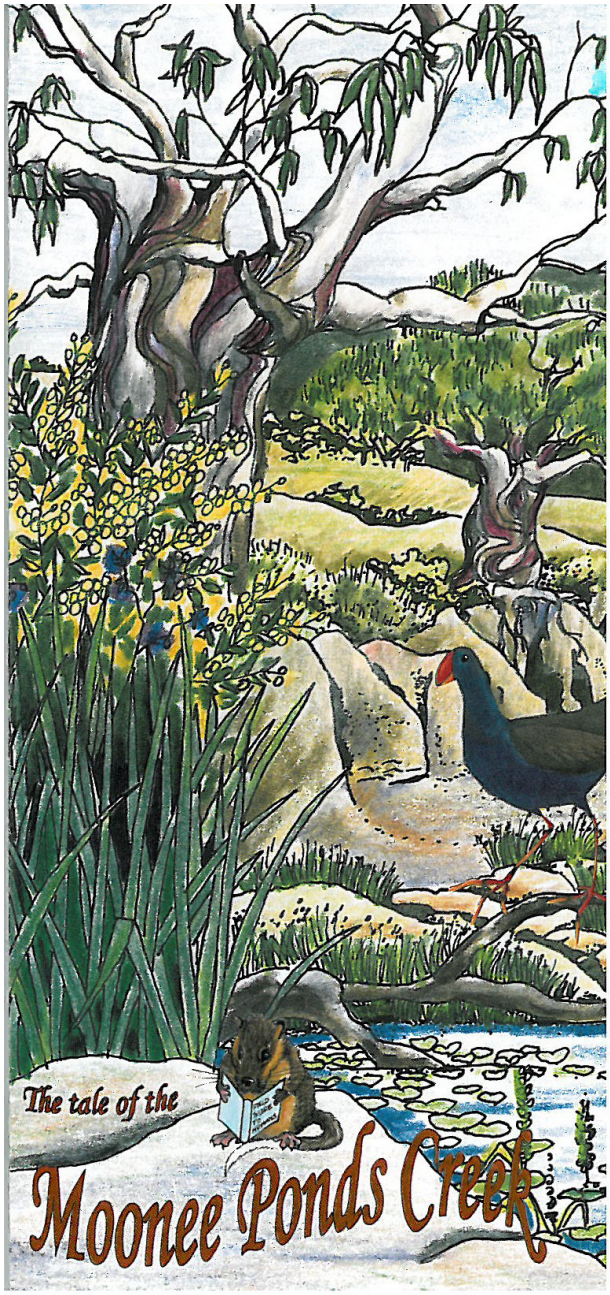
MOONEE PONDS CREEK CRUSADERS

Teacher's Water Education Manual



Early Childhood (Kindergarten – Grade 2)

Moonee Ponds Creek Crusaders

MERRI CREEK MANAGEMENT COMMITTEE

WATERWATCH Melbourne

CONTENTS

Acknowledgements

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- Luke Smith
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- Jacinta Molloy (Teacher of prep for 8 years)
- John Hughes (Oak Park Primary School)
- Michelle O'Rourke and Linda Brown (St. Vincent Primary School)

BACKGROUND INFORMATION

Moonee Ponds Creek Crusaders is a six session environmental education program, featuring different activities and topics. The focus is on the Moonee Ponds Creek catchment and the processes that can affect the creek and its environment. Whilst the program will be driven by your school / kindergarten, you will be able to book Waterwatch to come in and run certain activities to support the program.

This teacher's manual is a resource kit to run this six part program either within a short timeframe or monthly over a year.

In 2009 the program was piloted with Waterwatch educators presenting an activity for each of the six topics. From 2010 onwards Waterwatch educators are available to run 2 – 3 sessions at each school, depending on availability, and this kit contains all the information for you, the teacher, to run the rest of the activities yourself.
Waterwatch educators are available for help and queries on the contacts below.

What is Waterwatch?

Waterwatch is a community water monitoring program which enables Australians to become involved in the monitoring and management of waterways in their catchment. The program aims to build community understanding of water quality issues, and to encourage monitoring groups to undertake constructive actions to rectify water quality problems.

Participants include primary and secondary schools and community groups. Along the Moonee Ponds Creek Waterwatch is sponsored by the Moonee Valley, Moreland, Melbourne and Hume councils as well as Melbourne Water and the Department of Sustainability & Environment. The Merri Creek Management Committee hosts Waterwatch staff working in Merri and Moonee Ponds Creek catchments.

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ENVIRONMENTAL PEDAGOGIES

Theme: *Exploring the connections between water, living things and life in a creek, how litter affects the health of the creeks, understanding the value of water as a resource and discovering the delights through sensory experiences in its varied nature and properties.*

Key Pedagogies to apply:

- Invite the child's imagination
- Invite the child's natural curiosity
- Provide opportunities that are sensory and hands on
- Provide opportunities that allow for discovery/play
- Care and respect for our resources and living things/eco-literacy
- Positive attitudes and behaviour towards nature and the environment
- Balance of teacher directed structured experience and play

Key concepts and understandings

- Water is necessary for all life on earth. Where there is water there is life
- Plants and animals have adaptations that help them live in/on /around water
- Watery places make great habitats for living things
- Different objects can float or sink in water
- Litter, pollution and its effect on the waterways
- Life cycle of a frog

Skills

- Selecting natural materials to construct a healthy creek
- Selecting materials that are unhealthy in our creek
- Observation of water bugs in creek water and how they move
- Using plant material such as corks, leaves and seed pods to explore their movement in water, including floating and sinking
- Listening to frog calls
- Learning to be safe and hygienic when playing with water

A prep student from Oak Park Primary School looking closely at a wattle branch he found near the Moonee Ponds Creek

NOT SO LONG AGO

Through what we now know as Melbourne's north-western suburbs, there once flowed a dynamic waterway. The physical landscape we see today is not what the Moonee Ponds Creek was originally.

Moonee Ponds Creek at Woodlands Historic Park

The Tarnuk Westmeadows

The Moonee Ponds Creek begins its journey in granite hills north of Woodlands Historic Park. It is one of the watercourses that drain into the Yarra River providing a corridor between the mountains and the bay, for both Aboriginal people and fauna. The creek originally had shallow ponds of water that formed a chain along the length of the watercourse, isolated in drier times of the year, and flowing in the wetter months after heavy rains.

The Creek and Woiworung – (Woy wur rung) – the Wurundjeri people

These environments would have provided a water source as well as abundant plant and wildlife resources. Eels and Murnong (Yam Daisy) appear to have been prominent resources along the creek. As well as these food resources, there were camp locations on the nutrient-rich floodplains that, at certain times of the year would have encouraged Aboriginal people to take advantage of its seasonal bounty.

When Europeans first settled the Port Phillip region it was already occupied by five Aboriginal language groups. These groups spoke a related language and were part of the Kulin (Koolin) Nation of peoples.

These peoples were:
Eastern Kulin Language Group
Woiworung – (Woy wur rung) – the Wurundjeri people
Boonwurrong – (Boon er rong) – the Boonwurrong people
Taungurong – (Tung ger rong) – the Taungurong people
Dja Dja Wrung – (Jar Jar Wrung) – the Jaara people
Western Kulin Language Group
Wathaurung – (Wath er rong) – the Wathaurung people

Each of these language groups consisted of up to six or more land-owning units, called clans that spoke a related language and were connected through cultural and mutual interests, totems, trading initiatives and marital ties. The local clan, the **Gunung Willam Balluk** (meaning 'creek dwelling people'), were connected to the Moonee Ponds Creek and other waterways in the area.

There is still evidence of Aboriginal occupation at Woodlands Historic Park. Scattered through the park are scarred trees and surface stone tool scatters; and an occupation site is also listed in the park. Other resources within the park which would have been used by the Aborigines include kangaroos and possums, birdlife such as water fowl, and plant foods including Yam Daisy, tubers and gum resins. (1)

In 1840 Lady Mary Greene Stawell described the native inhabitants in her diary: '***When we first took up our abode at Woodlands, a tribe of Aborigines used to camp on the creek (Moonee Ponds Creek) that ran through our property. Their colour was a rich dark brown, their figures slight and graceful; they had fine eyes and splendid teeth, and thick black hair. They were very intelligent soon learning to understand English, and laughing heartily at anything that amused them…They were wonderfully athletic and agile, and it was a fine sight to see them throw their spears and boomerangs. In their games they used light reed spears, and it was remarkable how, with almost imperceptible movements, they avoided an opponent's spear. They danced in their corrobarrees at night, and it was picturesque to see these dark figures with the light from the large fires playing round them. Their only shelter from the weather were the "miamias" – mere windbreaks, made of branches of trees or, in winter, of bark; they lived a really open-air life and a most healthy one it was. They were different then from what they became afterwards, when they had learnt to drink, smoke and wear European clothes'. (2)***

European Settlement

In December 1824, after some 36 years of settlement at Botany Bay/Port Jackson, the first white men came overland to the Port Phillip area from New South Wales, a party led by Hamilton Hume and William Hilton Hovell.

In June 1835 John Batman brought a party from Van Diemen's Land (Tasmania). He appears to have crossed the district from the west to the east; his route most probably took him closer than Hume and Hovell to the Broadmeadows area as he travelled over the plains. Through treaties with the local Aborigines, he laid claim to a vast area of land to the north and west of Port Phillip Bay, some 240,000 ha, on behalf of the Port Phillip Association. Batman chose for himself an area extending from Deep Creek (Maribyrnong River) to the Merri Creek, incorporating most of the Broadmeadows area. On 2 September 1835, the Governor of the Colony of NSW (which then incorporated Port Phillip) repudiated Batman's and others' claims, and proclaimed the treaties void and the settlers to be trespassers. The region was taken under formal government control. (1)

In July-August 1835, an advance party sent by John Pascoe Fawkner from Van Diemen's Land also arrived in the Port Phillip area. (2) The Government Surveyor, Richard Hoddle, began surveying the Port Phillip area, dividing it into parishes each of approximately 65 square km, which were further subdivided. Hoddle's parishes in the Broadmeadows area included Jika Jika (taking in the area south of Rhodes Parade, Glenroy and east of the Moonee Ponds Creek); Doutta Galla (which included the Strathmore area); Will Will Rook (north of Rhodes Parade to north of Barry Road, and east-west from the Merri Creek to the Moonee Ponds Creek); and Tullamarine. The names were derived from Aboriginal names. (2)

The first land sales in the area of Strathmore on Moonee Ponds Creek were made in 1843 and 1845.

Early Development of the Lower Reaches of the Creek
Near its entry to the Yarra River, the creek formed a series of marshy ponds on the flood plain, with extensive salt marshes known as Batman's lagoon. With rapid development of Melbourne due to the Victorian gold rush in the 1850s, the swamp quickly became a receptacle for waste waters from Flemington, North Melbourne and Parkville.

In 1879 Batman lagoon was drained and filled to make way for the North Melbourne railway yards at its northern end. In the southern area, the filled-in marshes were called Dudley Flats, where, during the 1930s depression, impoverished people scrounged building material from the land-fill tip to build shelters and huts.

In the 1890s the lower Moonee Ponds Creek was used as a canal access for coal for railway locomotives.

The creek becomes a drain
Between 1940 and the 1980s the Melbourne Metropolitan Board of Works, now called Melbourne Water, realigned and concreted the creek from Strathmore to Flemington Road, in an attempt to stop periodical flooding. The modifications were part of extensive urban development of the lower floodplain. For much of its length through the northern suburbs it is now characterised as a concrete stormwater drain that parallels the Tullamarine Freeway.

The Creek in flood in 2005

(1) Lemon, A., 1982, Broadmeadows: a Forgotten History; Hargreen Publishing Company.
(2) Lennon, J., 1993, Red Gums and Riders: a History of Gellibrand Hill Park, Dept. of Conservation and Natural Resources.
(3) Hunt, A., 1993, Broadmeadows: A Concise History, Broadmeadows Historical Society.

Moonee Ponds – The Name

There are many different theories of the origins of the name 'Moonee Ponds'. Nobody really knows.

According to the Argus newspaper on 1st September 1934, Moonee Ponds was first known as Moonee Moonee Ponds which meant plenty of small flats. The same paper quoted Marl I. Meagher as saying the name derived from John Long Moonee, a British soldier who was a Crown grantee of allotments in and around Moonee Valley.

It is also claimed that Moonee Moonee was an Aborigine attached to the mounted police. Moonee Moonee, or Mooney Mooney was headman of the Balluk willam clan arrested at the same time as Tullamareena (see the story below).

The 1918 Victoria railways list of stations and names supports this derivation.
Another source says the Moonee Ponds area of Essendon almost certainly derived its name from a corruption of the name of Captain Mooney, who was a large land holder in the area.

It is considered most likely that the name was derived from the Aboriginal name for the Moonee Ponds creek rather than the name of any of the early European settlers. A form of the name first appeared in the surveyor Robert Hoddle's Field Book in 1837 when he referred to the "Mone Mone Chain of Ponds". This reference is very early in the Settlement of the Port Phillip area. Subsequent maps of the period show the name of the creek as "Moonee Moonee Chain of Ponds". The use of double word construction "Moonee Moonee" in the name is also typical of Aboriginal names as adopted by the European colonists.
(Source: www.enet.org.au/historyonline/suburb/suburbnames.htm)

Tullamarine derives from the Indigenous name Tullamareena

Tullamareena was a Woi wurrung man who escaped from the first Melbourne jail by burning it down, in a dramatic act of resistance to the imposition of White authority.

The background to the incident reveals much about how the white intruders overtaxed the hospitality of the Kulin peoples. By early 1838, Europeans had already taken over the best country around Melbourne, and sheep were spreading up and down the river valleys in plague proportions. Displaced from their traditional food-gathering areas, many Kulin took refuge in the town. Others came from far away, curious to see the strange new settlement.

At first, the only provision made for them in town was the Government Mission, near the present site of the Botanic Gardens, but it could not cope with the hundreds who flocked in. Tullamareena was a regular visitor there, and George Langhorne, the missionary, described him as 'a steady, industrious man'. He would have needed to be, given the regime at the mission, where people were expected to work long hours in the fields for very little return. When supplies at the mission ran short, the Kulin turned to other sources of food, among them a potato field beside the Yarra owned by one John Gardiner. One night in April 1838 a watchman saw a party of Aboriginal men, including Tullameerna, digging up potatoes. When he accosted them, a man pointed a gun at him.

The threat of violence was averted by Tullamareena, who persuaded his companion to lower his weapon. For a moment, this seemed to resolve the issue. The watchman and the potato-diggers shook hands, and the terrified watchman said he would not tell Gardiner they were there.

Then, as soon as their backs were turned, he ran home to raise the alarm. Gardiner's men rushed out, brandishing their weapons, and the potato-diggers fled. Most swam across the Yarra to safety, but Tullamareerna was knocked down with the butt of a rifle, tied up, forced into a boat and taken to the jail, along with another man known to the Europeans as Jin Jin.

When news of the incident reached the mission, there was a panic. The residents crowded around the missionary's house, asking what would happen to Tullamareena and Jin Jin. Then, fearing retribution, all but 30 of the people headed for the hills.

Tullamareena soon followed them, much to the authorities' surprise. His method of escape was ingenious. The jail was a crude structure with wooden walls and a thatched roof. Tullamareena pulled a long straw from the thatch and worked it through a chink in the wall into the guard room, where he held it over a candle until it caught alight. He then used the burning straw to set fire to the roof and escaped in the ensuing confusion.

In May 1839 the Assistant Protector William Thomas recorded the death of Tullamareena's wife, who was among the many Kulin to succumb to diseases introduced by the white settlers. She was buried next to her husband, who had died some six months earlier.

Further reading: Alastair Campbell, *John Batman and the Aborigines*, Kibble Press, 1987, p. 208; *Historical Records of Victoria*. Volume 2A: 'The Aborigines of Port Phillip, 1835-1839', pp. 213ff

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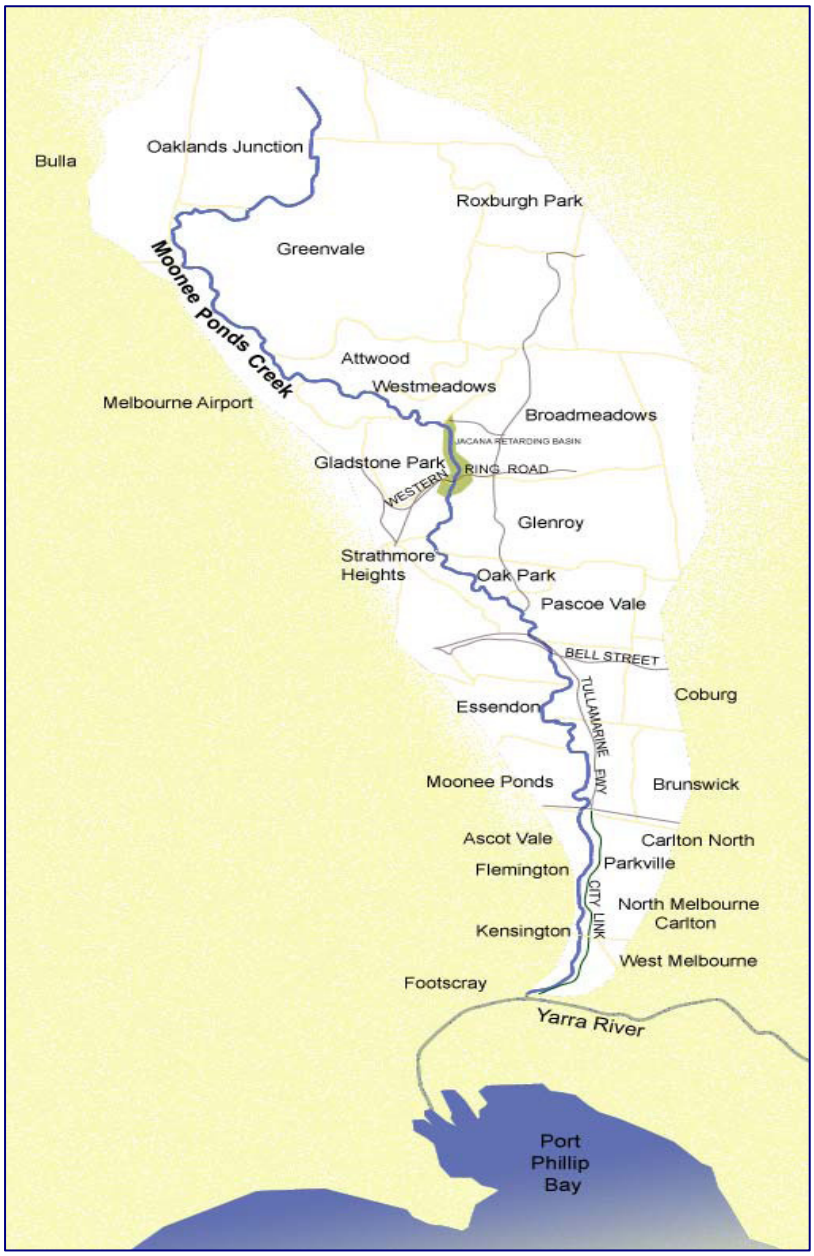
1. CREEK HABITAT

Theme: **What is a catchment?*
**A closer look at the Moonee Ponds Creek*

Background Information:



What is a catchment?

A **catchment** is an area of land from which all rain water runs into the same low point, creating a creek or river. Your school is in the **Moonee Ponds Creek catchment** (see map left and diagram on following page).

Moonee Ponds Creek drains an area of approximately 145 square kilometres. The catchment extends from Gellibrand Hill Park and Attwood, through parts of Broadmeadows, Glenroy, Essendon and Moonee Ponds, before flowing southward into the Yarra River. The catchment is almost totally urbanised and housing developments continue to expand across the remaining pastoral land in the upper catchment.

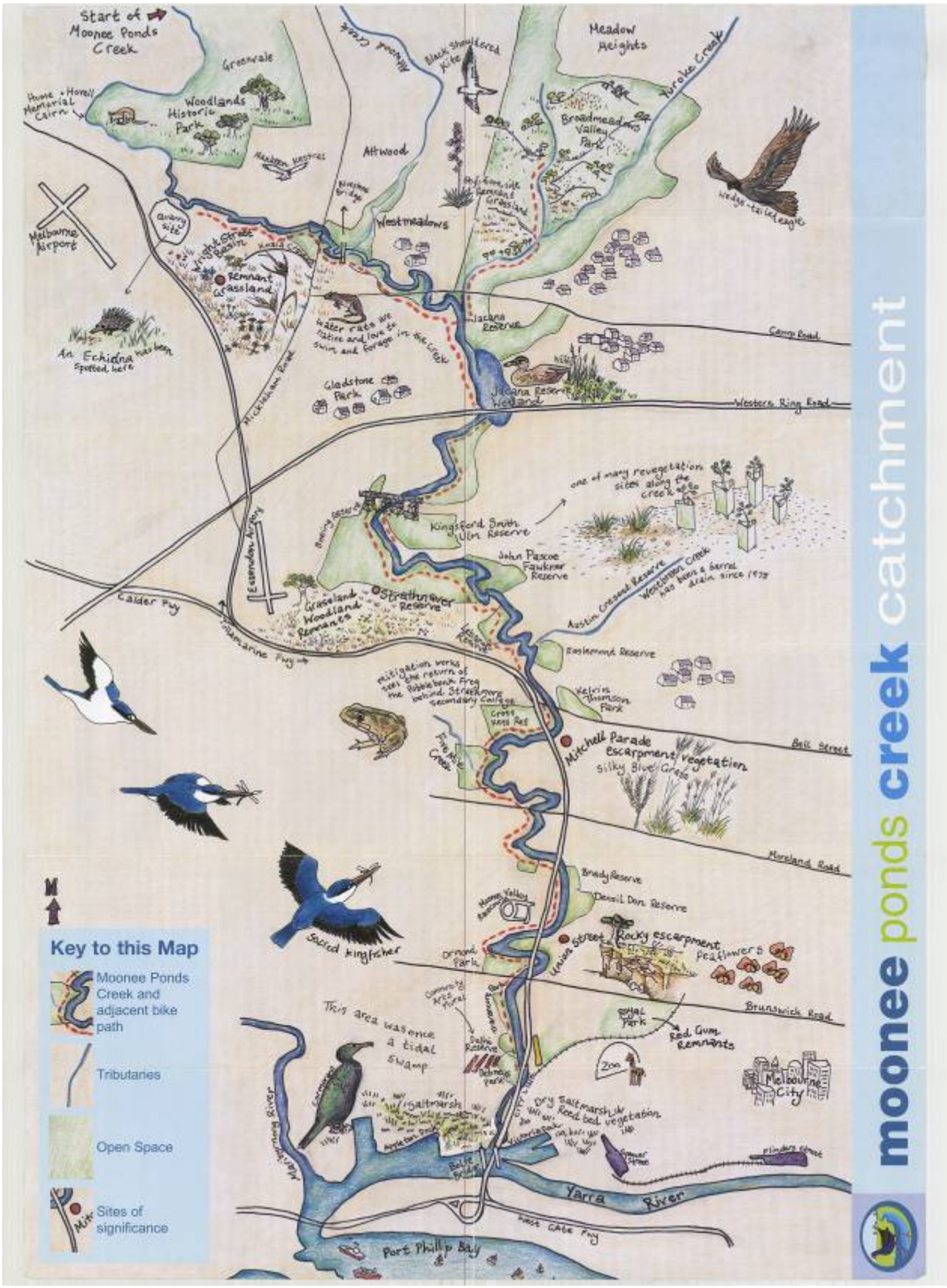
Essendon Airport and approximately half of Tullamarine Airport are also located within the Moonee Ponds catchment.

Work during the 1950's to increase flood protection resulted in the removal of bank vegetation and in-stream habitat in conjunction with concrete lining of much of the lower reaches of the creek.

The construction of the Tullamarine Freeway in the late 1960's into the early 1970's saw large sections of the creek realigned and concreted to improve the stream flow capacity and to prevent erosion.

Although the overall condition of Moonee Ponds Creek is very poor, there are small areas in better condition. The creek through Woodlands Historic Park has the best examples of a comparatively natural waterway within the catchment. Risks to the creek include poor streamside vegetation and stormwater runoff.

Moonee Ponds Catchment Map (above):
The lighter area represents the Moonee Ponds Creek catchment. Rain that falls within this area will eventually drain into the Moonee Ponds Creek.



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A Closer Look at the Moonee Ponds Creek

Taking a journey down the Moonee Ponds Creek, there is so much to discover along the way. In the upper reaches, through Woodlands Historic Park, it weaves its way passed the ancient River Red Gums that bear the scars of the **Gunung Willam Balluk** people who lived on this land.

Scar Tree at Woodlands Historic Park

The hills in Woodlands Historic Park retain their mixture of gum trees and Drooping She-oak, in the remnant Grey Box, River Red Gum and Yellow Box woodland.

The Park also contains valuable remnants of grassy woodland open forest, consisting mainly of grasses and herbs, with mostly River Red Gum (*Eucalyptus camaldulensis)* trees. (www.parkweb.vic.gov.au) Melways map 5

Winding down to the lower part of the park, the creek pauses at majestic billabongs. After good rains, the billabongs fill and come alive with plants and animals.

The Billabongs at Woodlands Historic Park

Woodlands Historic homestead is a rare example of an early pre-fabricated building which was designed in Britain and shipped here. It was built in 1840, by the Greene family.

Magnolias at the Homestead are the oldest recorded garden plants in Victoria.

Woodlands Homestead and its outbuildings and gardens were extensively restored in 1983 and 1984.

The homestead is now leased by Living Legends. You can visit it and meet retired race horses in the park.

The park also contains the ruins of two other 19th century homesteads, Cumberland and Dun Donald.

Hidden volcanic rock formations remind us of the ancient beginnings of the land. See if you can find them along the creek.

Basalt rocks near the Tullamarine landfill site

South of Woodlands Park the creek flows through The Tarnuk. 'Tarnuk' literally means 'water bowl' (photo on right). These vessels were fashioned by the local Gullum Willam Balluk tribe, from gnarled growths on the River Red Gums that line the Moonee Ponds Creek.

The Tarnuk, Westmeadows

Surrounded by residential housing The Tarnuk is considered a site of plant and animal significance. Many of the original types and groups of plants still grow in this area. These are classed as grassy woodland, riparian woodland, riparian scrub and aquatic plants. However The Tarnuk is under threat from weeds and erosion. Melways 5 H6, J6

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After The Tarnuk the creek winds through historic Westmeadows, under this stone bridge which was built in 1869. The bridge is registered by the National Trust, and is on the Australian and Victorian registers of historic sites.
Melways 6 A6

Bluestone and granite bridge in Westmeadows

This is the old police lockup, built in 1859, in Westmeadows. It was mostly used to lock drunken and disorderly people up overnight. See if you can find it in the Westmeadows village.

Westmeadows old police lockup

Moonee Ponds Creek in flood in 2004, at the junction with Yuroke Creek. Gellibrand Hill is in the distance.

Yuroke Creek drains parts of Broadmeadows, Coolaroo and Westmeadows. It enters Moonee Ponds Creek from the north at Westmeadows.
Melways 6 D8

The flood water then flows down to **Jacana Wetlands**. Here, a barrier has been built to delay the flood water in its journey downstream.

The Jacana Wetlands were created by Melbourne Water in 2002. They now support frog populations including the endangered Growling Grass Frog. They are used by many birds. Many unusual birds have been seen in these wetlands, especially migrating birds that use it as a stopping point.
Melways 6 D9, D11

Above: Jacana Wetlands in the flood of 2004

Left: One year later in 2005. Go and look at the wetlands now and see the difference five years of planting and growth have made.

The creek's journey now takes it south through **Gowanbrae,** under the railway trestle bridge. Trains to the north and Sydney travel over this bridge. The bridge was constructed in 1929, but the railway line was a narrow gauge, and travellers to Sydney had to change trains at Broadmeadows. In 1962, a wider gauge line was installed next to the old tracks. Now passengers can travel from Melbourne to Sydney without changing trains.
Melways 16 C3

Planting at Boeing Reserve, above the creek, with the trestle bridge in the background

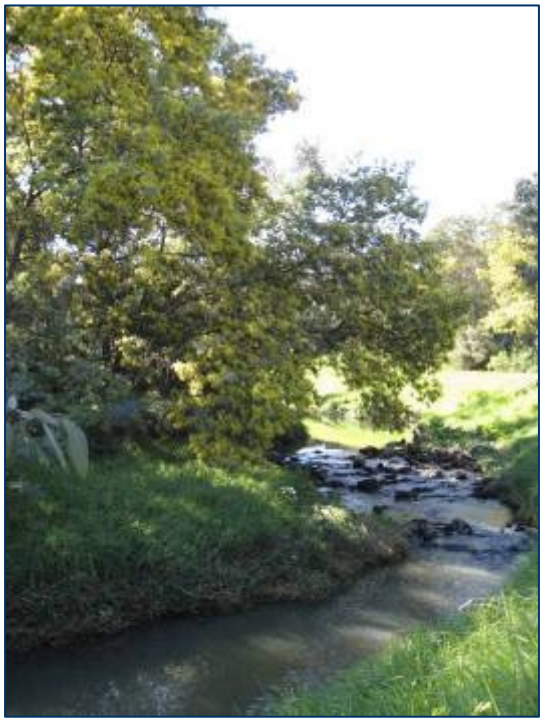
Strathnaver Grassland sits alongside the Moonee Ponds Creek in Strathmore Heights. This small but significant site contains remnants of the vegetation that once grew in the area. Indigenous grass species grow over much of the site and amongst other wildflowers, a large population of Common Everlasting Daisies (*Chrysocephalum apiculatum*) puts on a dazzling yellow display in spring.
Melways 16 E6

Left: In 2004 ABC's Gardening Australia show comes to Strathnaver Grassland.

The site also contains a silcrete rock formation that would have been used by Gunung Willam Balluk people as a quarry for tools.

These rocks provide nooks and crannies for Lichens and Mosses to grow on, and create important micro climates for other plants to germinate in.

Right: Lichen nestling in a rock crevice



At John Pascoe Fawkner Reserve, in Oak Park, the creek flows between banks of lovely wattles and Tree Violets (*Melicytus dentatus*).
Melways 16 F7

A riffle (fast flowing section) in the creek at John Pascoe Fawkner Reserve in Oak Park/Strathmore

South of **Oak Park**, the creek yields to the pressures of urbanisation and has become a concrete-lined drain. Houses press close to its banks but this does not stop work being done to create a green buffer and habitat for plants and animals.
Melways 16 G8

The creek near Margaret Street in Oak Park

Westbreen Creek flows into Moonee Ponds Creek in Pascoe Vale. This little creek is home to many bird and frog species, including the Growling Grass Frog (endangered species). The creek drains parts of the suburb of Pascoe Vale.
Melways 16 K9

At **Cross Keys Reserve**, in Essendon, a section of the concrete lining has been removed and a natural meander is allowed in the creek.

Bends and meanders occur naturally in creeks and rivers as water flows to the lowest point in the landscape.
Melways 29 A1

The CityLink Crossing – Indigenous reflections of the Moonee Ponds Creek were created by artists Mandy Nicholson (Wurundjeri), Treahna Hamm (Yorta Yorta) and Annette Sax (Taungurung). They were commissioned by CityLink to create artworks on the freeway sound wall and the bridge over the creek between Talbot Road and Wallace Crescent, Strathmore. Melways 29 A1

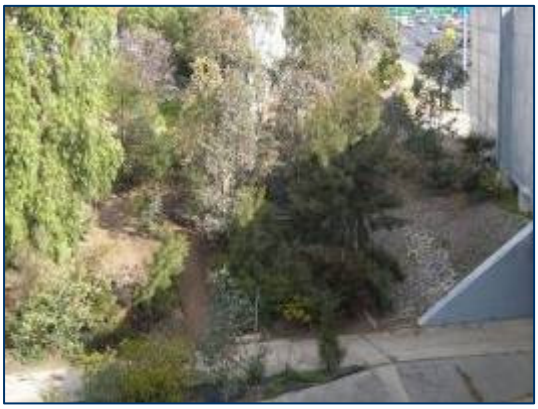
The CityLink Crossing – Indigenous reflections of the Moonee Ponds Creek

The images reflect and recognise the traditional lands of the Kulin Nation and the concepts of *Country*, *Creation*, *Relationship* and *Connection*, as well as the *Past*, *Present* and *Future* life of the Moonee Ponds Creek.

The connection to *Country* (land) is represented by the contour design surrounding the Moonee Ponds Creek, and the Bogong Moth with two larvae. The Moonee Ponds Creek and the Bogong Moth were important to the people of the Kulin Nation as a water and food source respectively. The concept of *Creation* is captured through the image of a Wedge-tail Eagle's wing. Bunjil, the Wedge-tail Eagle, is the Creator Spirit of the land, the people and their language. Two sky panels denote *Relationship* (symbolised by a cockatoo feather) and *Connection* (symbolised by the leaf) to the community of the Moonee Ponds Creek. The two water images depict the *Past* (spiral designs), *Present* and *Future* (wavy spiral designs) life of the Moonee Ponds.

From the west, the **Five Mile Creek** joins Moonee Ponds Creek at Essendon.
Melways 28 J2

Right: Junction of Moonee Ponds Creek and Five Mile Creek



South of Albion Road, the Tullamarine Freeway uses the corridor of the Moonee Ponds Creek. Despite the creek in many places being overshadowed by the freeway, at every opportunity, trees, shrubs, grasses and other plants have been established next it. This is one example of a pocket of urban forest next to the freeway.

Urban forest created by Brunswick South-west Planters

At **Union Street** in **Brunswick** the creek passes an interesting rocky outcrop. This is an example of a sedimentary rock as can be seen by the many layers. There are small hollows in this rock where European honey bees have made their nest. This section also has a small collection of remnant vegetation, where there are lots of plants of state and regional significance.
Melways 29 B9

Sedimentary rock outcrop at Union Street Brunswick

Nature quietly takes a hold where ever it can. River Red Gums naturally germinate along creeks and rivers after floods wash their seeds downstream. This one has got a foot hold in a crack in the concrete lining of the creek.

A River Red Gum sapling clinging to life in a crack in the concrete channel

As you travel along the Moonee Ponds Creek Trail, during planting season you may see active restoration being carried out by *Creek Crusaders*.

In **Delhi Reserve**, Travencore Park (Flemington), art panels hang on the concrete wall of the freeway sound barrier.
Melways 29 A8

Right: Creek Crusader volunteers hard at work in Delhi Reserve

The **CityLink Ornamental Pond** serves many purposes. It provides habitat, it is a slow point for the creek, enabling silt to settle out of the water, and creates a reflective surface for the red sculptural poles. Silt is cleaned out of the pond each year to make sure that the water quality is maintained.
Melways 29 C12

Red sculptural poles reflected in the CityLink Ornamental Pond

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All the way along Moonee Ponds Creek, *Creek Crusaders* are out in force each year, for Clean Up Australia Day.

At **Flemington** in Debney Park, this day is a great opportunity to connect people who live and work along the creek. By sharing knowledge of the creek, food and music, we come together to celebrate our diverse community.
Melways 29 B12

Creek Crusaders at work along the creek for Clean Up Australia Day

Above: Trin Warren Tam-boore, Royal Park Wetlands with the Commonwealth Games Athletes' Village in the background.

At **Royal Park**, the creek is joined by water from the Royal Park Wetlands, called Trin Warren Tam-boore (Bellbird waterhole). These wetlands were created as part of the development of the 2006 Commonwealth Games Athletes' Village. Through the natural, biological action of native plants, stormwater from the village is treated and filtered before flowing into the creek. The plants, rocks and water form a home for birds, frogs, snakes and a wide range of aquatic animals. Melways 29 D12

Right: Water flows from the Royal Park Drain into the Wetlands where it is filtered before flowing into Moonee Ponds Creek

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Near **Macaulay Station**, the concrete lining has been removed, allowing the creek to flow more naturally for the rest of its journey to the Yarra River. Here the creek broadens out and is influenced by tidal flows.
Melways 43 B3

Across the creek from Macaulay train station in Kensington

Creek Crusaders are working to restore the natural vegetation along the banks. The creek now flows amongst industrial sites, rail yards and the freeway. This area was once marshland.
Melways 43 A6

Creek Crusaders planting along the bank of the creek

Black Swans nest in this area. You may be lucky enough to see some sitting on a nest or cygnets (baby swans) with their parents in this stretch of the creek.

A black swan and cygnet below Dynon Road, North Melbourne

Just before the creek reaches its final destination, there is a site near **Footscray Road**, belonging to Mainco. Vic Track staff and their CEO spent a warm afternoon planting over 600 plants and trees on this site as part of the Keep Australia Beautiful Week. This group are enthusiastic *Creek Crusaders*, keen to restore a degraded industrial site along the Moonee Ponds Creek Trail.
Melways 43 B7

Vic-Track staff with one of the trees they planted

Moonee Ponds Creek reaches the Yarra River at Docklands.
Melways 42 J8

Moonee Ponds Creek in flood in 2004 where it reaches the Yarra at Docklands.

Activities: To be run by the teacher

Catchment Capers

Aim: This activity demonstrates how a catchment works

Equipment: Watering can or spray bottle filled with water
Tarpaulin
Books or block for the base
Bucket or basin to catch the water (acts as the bay)

Steps:
1. Place books / blocks as a base
2. Place tarp over base creating an incline so water can run down the sides into a crevice creating a creek.
3. Place basin / bucket at the bottom of the creek to catch any water.
4. Spray water along the creek beds and banks.

Discussion: Questions to discuss after the experiment
1. Which way did the water flow?
2. What happened to water in the flat / high areas?

Creating a creek

Aim: To demonstrate what makes a healthy creek

Equipment: Transparent container
Materials to construct a creek, e.g. sand, stones, plants material, water
Material that make an unhealthy creek, e.g. litter and other contaminants

Steps:
1. Students choose the items that make up a healthy creek and put them in the container (see photo below)
2. Students then add the materials that would make the creek unhealthy

Discussion: Questions to discuss after the experiment
1. Why did you choose the materials you did to make it healthy?
2. Why is the litter, etc is bad for the creek?

Students create a healthy creek using natural materials provided.

Water Play

Aim: Children use natural and plant materials to explore the concepts of sinking and floating

Equipment: Transparent container
Materials for sinking and floating, e.g. corks, gourds, pebbles, walnut shells, seed pods, leaves, black bean seed, screws, sponges

Steps:
1. Students guess whether each item will sink or swim.
2. Place the materials in the creek and see what they do.
3. Record the results on a table such as shown below:

Material	**What do you think it will do?**	**What did it do when you put it in the water?**
Cork	Float	Float
Leaf	Sink	Float

Discussion: Questions to discuss after the experiment
4. What animals float on the water? E.g. ducks
5. What animals are in the middle of the water? E.g. fish, waterbugs
6. What animals are in the bottom of the water? Freshwater snails

Children discover what floats and sinks during this interactive activity

2. LITTER STINKS

Theme: * *There is litter in the creek.*
* *How the litter gets to the creek.*
* *What we can do to help keep the creek clean.*

Background Information:

In urban environments stormwater is the main cause of pollution in our creeks. After a rain event all the water finds its way into our waterways as it trickles downhill through valleys and slopes, through gutters and off rooves, along our streets, over hard concrete and bitumen surfaces and is washed down the stormwater drains on the edge of the road. The drains then lead directly to the local creek. But the water carries with it any pollution that it picks up on the way including sand and soil, animal faeces, oils, chemicals, detergents and litter.

Stormwater does not include sewage, as this is diverted through a different pipe system where it goes to a treatment facility. Sewage is wastewater from our bathrooms, kitchens and laundries that flows down any of the drains *inside* our homes and businesses, whereas stormwater is water from outside. Sewage and stormwater use different pipe systems. Sewage goes to a treatment facility, stormwater flows into creeks.

Activity: to be run by the teacher or Waterwatch (depending on availability)

Stormwater Story for the Moonee Ponds Creek

Aim: How different types of pollution gets into the creek
What we can do to help keep the creek clean

Equipment:
Small containers (film canisters work well) filled with a makeshift pollutants to go with each character
Sieve to remove waste
Large transparent container / fish tank (preferably see through)

Story Characters:	**Pollutants in canisters:**
Hiker Harry	toilet paper sheets
Fisherman Fred	fishing line or string
Swimmer Susie	cordial (representing urine)
Farmer Joe	rock salt (representing fertiliser)
Heard of Cows/ sheep	dirt and mud clumps (representing poo)
River Bank (can multiply)	dirt
Trees	leaves
Mr. Maloney	grass clippings
Dog (can multiply)	mud (representing dog poo)

Builder Bob	sand/gravel
Sally Suds	detergent
People in cars	cooking oil or soy sauce (to represent car oil)
People in their homes	newspaper pieces
Smokers (can multiply)	cigarette butts or rolled up yellow paper
School kids (can multiply)	rubbish (soft drink tops, chupa chup wrappers)

Introduction:

- Assign each student a character and corresponding film canister as outlined above. (If you have more than 15 students, assign extra students to be dogs, city folk or school kids or make up more characters).
- Get students to sit in a circle and place the large container/fish tank in the centre of the circle.
- Read the story and when each student hears the name of their character mentioned in the story, they must empty the contents of their film canister into the water container in the centre.
- The stormwater mixture should obviously look pretty disgusting by the end of the story!
- Students can all chant "Uh Oh" after each pollutant is added.

Story:

We will start our story just north of the Melbourne Airport. This is where the Moonee Ponds Creek begins its winding journey to where it meets the Yarra River at Docklands. The Yarra River then flows out into the ocean. The Moonee Ponds Creek starts its journey in the beautiful Woodlands Historic Park among the beautiful River Red Gum trees.
This region is the traditional land of the Wurundjeri- willam people.

It was a beautiful morning and the clear water of the Moonee Ponds Creek was shinning in the sunlight as it bubbled over stones and pebbles. Many animals lived in the creek, such as frogs, fish and lots of tiny little water bugs. Because it was such a nice spot in the woodland, many people came to visit. Some people loved it so much that they would stay all day for picnics and bush walking. The Smith family was going on a hike along the creek. But soon, one of the children, who had had a big juice at lunch needed to go the toilet. There were no toilets around so ***Hiker Harry*** grabbed some toilet paper and went to go to the toilet behind a tree. But he forgot to bury his toilet paper after he'd finished with it. Soon it started to rain and Hiker Harry's used toilet paper was washed into the nearby creek. Uh-oh!

In this woodland, a Kookaburra starts laughing and a snake slivers through the grass. Eastern Grey Kangaroos jump around and echidnas use their big tongues to eat ants.

The creek continued to flow through the woodland. It soon reached a fisherman who was sitting on the banks of the stream trying to catch a fish. The fish didn't seem to be biting this morning and the rain was starting to get heavy so he packed up his gear and decided to go home. But he didn't realise that he left some fishing line sitting on a rock next to the

water. So sure enough ***Fisherman Fred's*** fishing line was soon washed into the creek by the rain. Uh-oh!

There was a section of the creek in Attwood where the local kids liked to go swimming. It wasn't that deep but they sat down, letting the water flow over their legs. But one of the kids, ***Swimmer Susie***, was suddenly busting to go to the toilet. She was having too much fun swimming, so she thought 'who cares' & went right there in the water. Uh-oh!

The creek kept flowing through some farms. At the Jones farm, the farmer was putting some fertiliser on his plants to make them grow better. But ***Farmer Joe*** didn't realise that the rain washed the fertiliser into the creek. Uh-oh!

Farmers had cows eating grass on the farm near the creek. The cows would walk through the creek, sometimes to get a drink, sometimes to get to the other side. The cows stomped the dirt on the ***River Bank.*** The dirt then fell into the creek.
The ***Cows*** also did many cow poo's near and in the creek.

Along the banks of the creek here at the Jones farm, somebody had chopped away all the big trees like River Red Gums and removed all the bushes and shrubs. So the dirt on the edge of the banks had no tree roots to hold onto. So when the rains came, the water washed heaps of dirt into the river. Uh-oh! This is called ***Erosion***.

Moonee Ponds Creek soon passed through the farmland areas. It is looking a little dirty now, but still some little bugs liked to live in it. The creek was now at Broadmeadows where there were suddenly lots of houses around. There were at least some trees planted along the edge of little stream, so that the animals in the river could have some shade. But they were the wrong trees! They weren't native trees that come from Australia, like gum trees, but strange trees from overseas. In autumn time, all the leaves fell off these ***trees*** and landed straight in the creek. Uh-oh!

The rain stopped for a little while so ***Mr. Maloney***, whose house is right next to the creek, decided to mow his lawn. When he'd finished, he put all his grass clippings in a big pile at the back of his garden, because he didn't know what else to do with them. Just as he sat back down in front of the telly to watch the Saturday footy match, the rain started again and his grass clippings were washed over the ground and into Moonee Ponds Creek.
Uh-oh!
The creek then flowed through Royal Park where people liked to walk their ***dogs***. It was a nice park, except there was dog poo all over the ground! So where do you think the dog poo was ending up on a rainy day like today? –In the creek. Uh-oh!

Down the road from the park, ***Builder Bob*** was building a new house. He was mixing up some cement, which was his favourite job! But today it was not so much fun, because the rain just wouldn't stop and he was getting very wet! But *Builder Bob* didn't realise the rain was washing his cement gravel down the front driveway and into the gutter on the side of the road. The cement gravel was then going down the drain and into the creek nearby. Uh-oh!

The rain then stopped again so ***Sally Suds*** decided to wash her Dad's car to earn her pocket money for the week. She loved this job and really wanted the money because she was saving up for a bike. As she washed her Dad's car parked in their driveway, she watched as the soapy bubbles flowed down the driveway and into the drain in the gutter on the side of the road. She wondered where they were going to end up, but didn't realise that the soaps were flowing into the creek near her house. Uh-oh!

Once the river reached Flemington, it is not too healthy (as you can see). But here in the city, still more pollution was finding its way into the creek! ***People in cars*** didn't realise that the petrol and oil in their cars was sometimes leaking onto the road and that this is a problem when the rain washes it down the stormwater drains and into the creek.

Other ***people in their homes*** also didn't realise that the newspaper and other rubbish that had blown out of their recycling bins on bin night was now being washed by the rain down the same drains and into the creek. Uh-oh!

In their school yard some ***school children*** had finished their lunch so dropped the wrappers on the ground. Those wrappers were washed down the drain and into the creek.

Some ***smokers*** waiting at a tram stop were smoking and then dropped their cigarette butts on the ground. Cigarette butts are one of the worst types of litter as one butt pollutes eight buckets of water!!

Moonee Ponds Creek is now looking very sick. This polluted water then flows into the Yarra River which has been through a similar journey and all the pollution from the Moonee Ponds Creek and the Yarra River end up in the ocean!!!

Discussion:

What could the characters have done differently?

What can we do to help keep the creek clean?

What other types of litter can you think of?

3. WATERBUG DISCOVERY

Theme: * *There are bugs living in the creek*
* *How different types of waterbugs move*
* *Waterbugs can tell us how healthy the water is*

Background Information:

There are lots of different types of waterbugs (freshwater macroinvertebrates) living in our waterways, such as snails, mites, bugs, beetles and dragonfly larvae which can tell us a lot about the quality of the water. A lot of waterbugs are food for bigger animals like fish, platypus, water rats (Rakali) and birds. Waterbug surveys involve identifying the 'bugs' living in our waterways. Some waterbugs are very sensitive to pollution which means they provide an excellent indicator of the health of our waterways. Generally sites with good quality water have many different kinds of waterbugs (also known as having a high level of species diversity).
There are lots of different types of waterbugs and each type need specific environmental conditions, such as nutrients and enough oxygen in the water, in order to survive. Changes in water quality can lower the numbers of different types of water bugs and increase those bugs which are more tolerant to the conditions in the water. Bugs that can survive under polluted conditions usually increase in number because other types of bugs aren't competing with them for food.

Sensitivity Levels of Water Bugs

Very Sensitive	Animals are only likely to be found in streams with good water quality
Sensitive	Animals are usually only found in streams with good or medium water quality
Medium	Animals can be found in streams with good or medium water quality but are less likely to be found in those of poor quality.
Tolerant	Animals can be found across a range of water quality in streams, but can live in poor-quality water
Very Tolerant	Animals can be found in water of poor to good quality, but are usually the most abundant groups in streams with poor water quality.

Activity: To be run by Waterwatch Officer

Waterbug Discovery

Aim: Students will see live waterbugs from Moonee Ponds Creek

Equipment: The Waterwatch Officer will bring a sample of creek water with waterbugs in it and run a session in which all students will look at and collect waterbugs using a spoon.
See Appendix 1: Critters in the Creek a pictorial poster of the different waterbugs found in Moonee Ponds Creek.
Discussion: What shapes were the bugs and how did they move?

Activities: To be led by the teacher after the Waterwatch session

Waterbug Drama

Aim: To follow up on what the students noticed about the waterbugs shapes and movements

Steps: Students can work alone in pairs or small groups.
Students decide on a waterbug they will act out.
Give them a few minutes to coordinate how they will act out the movement of the bug.
In front of the class each group acts out their waterbug whilst the rest of the class guesses which bug they are.

Discussion: How did the waterbugs move?

Waterbug Art

Aim: To follow up on what the students noticed about the waterbugs shapes and movements

Equipment: Paper, pencils, modelling clay, goggle eyes, natural materials (sticks, leaves, seed pods)

Activity: 1. Students can draw their favourite waterbug looking at the number of legs, how big the eyes are and do they have a long body?
2. Students can make their bugs out of any variety of materials you would like to supply.

Discussion: What shapes were the waterbugs bodies?

4. FANTASTIC FROGS

Theme: **Many different frogs live on the Moonee Ponds Creek*
**Each species of frog has a different call*
**The frog lifecycle*

Background Information:

- Frogs have been on the earth for 400 million years
- There are about 6,500 frogs world wide
- Frogs eat insects, waterbugs, other frogs and algae
- Only male frogs call as they are trying to attract a mate. Females only hear the call of their own species, except for Growling Grass Frogs which eat smaller frogs, so need to hear them.

Common Frogs of Moonee Ponds Creek

Name: Pobblebonk (*Limnodynastes dumerili)*
Size: 5-8 cm
Distribution: Common and widespread.
Description: A medium to large frog with 2 sub-species occurring around Melbourne.
Habitat: Despite its reliance on large permanent bodies of water such as dams and large ponds, individuals have been found burrowed in gardens several kilometres away from breeding sites.
Call: Well known for the male's explosive single note advertisement call ***'bonk'***.
Breeding: Spring and early summer
Eggs: Females produce floating foam masses of up to 4,000 pigmented eggs.
Tadpoles: Are usually darkly pigmented and can grow in excess of 7 cm. If conditions are suitable metamorphosis into the adult phase can be delayed well over 12 months.

Name: Growling Grass Frog (*Litoria raniformis*)
Size: 6- 9 cm
Distribution: Once common around the waterways of Melbourne, this species has now become so rare that it has been classified as vulnerable. They are found in the Moonee Ponds Catchment at Jacana Wetlands and Westbreen Creek.
Description: Large with long back legs this frog is easily recognised by its green and gold colouration and scattered warts. It is the only indigenous green frog around Melbourne.
Habitat: Associated with large permanent water bodies such as dams and large grassy wetlands.
Call: Males produce a growl-like ***'cra–wark cra–a–ak crok–crok'.***
Breeding: Spring through to early summer
Eggs: Several thousand eggs are laid in extensive mats that eventually sink to the bottom.
Tadpoles: Can reach over 10cm in length making them the biggest tadpoles around Melbourne.

For more information on frogs and to hear their calls visit: www.frogs.org.au and see the *Getting to know the frogs of Melbourne* poster in Appendix 2.

Activities: to be run by the teacher

Frog Lifecycle Craft Activity

Aim: Look at the changes a frog goes through in its life

Equipment:
- blue paper with oval printed on it (A4) - green paper (A5)
- grey/brown paper (A5 or smaller) - bubble wrap cut into small pieces
- scissors, pencils, textas and glue

Introduction: Talk about the frog life cycle:

Frogs lay eggs, sometimes thousands at once. The eggs turn into tadpoles, which live only in the water, have gills and eat water plants. They then start to grow their front legs, then their back legs. The mass of the tail is redistributed over the frogs' body. The fully grown frog has lungs and breathes air like us. The female frog then lays eggs and the cycle starts again.

Session:

1. Hand out blue sheet, scissors and pencils and get kids to cut out pond (around printed oval)
2. Hand out grey/brown sheet for students to draw a tadpole on (just needs head and tail) cut it out and stick it around the edge of the pond.
3. Hand out green sheets and get them to draw a frog, cut it out and stick it around the edge of the pond. Talk about body parts – head, 4 legs (back ones longer) etc. They can look at pictures for help (see page 15 for details).
4. Hand out bubble wrap; students put a texta dot on each bubble to show the tadpole growing. Then stick it on the edge of the blue pond
5. Students draw arrows to complete the life-cycle.

Frog Sounds

Aim: Hearing frog calls and learning that each species has a different call.

Equipment: Frog cards - see Appendix 3
Frog calls found on the website www.frogs.org.au

Introduction: Play the frog calls, looking at pictures of the frog that goes with it (found in appendix 3)
Students to think of a sound the frog call reminds them of and write it next to the frog's name on the board.

Discussion: What do the frogs sound like?

Song: **Mr. Frog**

Mister Frog jumped out of his pond one day
And found himself in the rain
Said he I'll get wet and I might catch cold
So he jumped in the pond again
Anon.

.

5. PRECIOUS PLANTS

Theme: *The Moonee Ponds Creek was a supermarket for the local indigenous people*
Exploring plants uses your senses
What live in different parts of a River Red Gum

Background Information:
Plants are an important part of the land. Their roots help to hold the banks of rivers and creeks together and stop them from eroding. Plants also help to keep the watertable down, provide shelter for birds and animals as well as providing food for them.

Indigenous plants are local plants that are best suited to the soil and climate of their local area and provide the best habitat for local animals.
Picture left: The indigenous Kangaroo Grass (*Themeda triandra)* found in many local grasslands.

Native plants can come from anywhere in Australia and don't necessarily suit local soil types and climate.
Picture right: A Western Australian plant, such as the Kangaroo Paw pictured right would be classified as an introduced plant along the Moonee Ponds Creek.

Introduced plants are from other parts of the world, also known as weeds.
Picture left: Arum Lily, originally from South Africa found along a local creek.

River Red Gums (*Eucalyptus camaldulensis*)
(**Kulin language – Biel**) is an iconic indigenous species of the Moonee Ponds catchment. Some individual trees found along the creek in Woodlands Historic Park are around 400 years old. These trees provide homes to possums, birds, owls and micro bats, as well as many different insects and invertebrates.

The River Red Gum has distinct fruiting capsules which look like cones. The leaves are often infested by insect larva called lerps which are sweet and were eaten by Indigenous people.
To the Indigenous people the River Red Gum is symbolic of the entire community and access to the land and its resources.

Yam Daisy *(Microseris lanceolata)*
(**Kulin language – Murnong**)
The non-starchy roots could be eaten raw or cooked. Cooked in the earth ovens the roots produce a dark sweet juice called Minne.

Austral Crane's Bill - *(Geranium solanderi)*
(Kulin language – Terrat)
A native herb; Indigenous people cooked and ate the starchy root. It was also used to treat diarrhoea.

Kangaroo Apple (*Solanum aviculare*) can be found at various points along the creek.

The leaf shape looks like the footprint of a Kangaroo (see left photo).

The ripe red berries (photo above right) were eaten by the Indigenous people of the area.

Hop Goodenia - *(Goodenia ovata)*
When the leaves and twigs are infused together they are reported to have anti-diabetic capabilities
The plant was used to help children sleep on a long journey.

Silver Banksia - *(Banksia marginata)*
(Kulin language – Woorike)
The flowering cones were soaked in water in tarnuks to extract the sweet nectar to make drinks. The dry cones were also used as strainers.

Mat rush - *(Lomandra longifolia)*
(**Kulin language – Karawun**)
The long leaves were used to make baskets and fibre was scraped out of the leaves to make string-bags (called Warrak/Belang). The roots were usually eaten roasted, seeds were collected and ground to make a type of flour, and the soft base of the leaves could be eaten as a snack while travelling.

Pig face - *(Carpobrotus modestus)*
(**Kulin language – Keeng**)
When the fruit is ripe in summer it can be eaten raw.
The green leaves can also be eaten cooked or uncooked.

Drooping She-oak - (*Allocasuarina verticillata)*
(**Kulin language – Wayetuck**)
The young shoots and cones were eaten.
The wood of the she-oak was used to make wonguims also known as 'boomerangs' and other implements.

Spreading Wattle (*Acacia genistifolia)*
(**Kulin language – Burn nar look**)
Many Acacia's had different uses.
The gum (sap) would be collected and soaked in water to make a sweet drink. It was also used as glue.
The bark after being soaked in hot water was used to treat indigestion and for tanning.
The seeds were ground to make flour, and the wood was used to make tools.

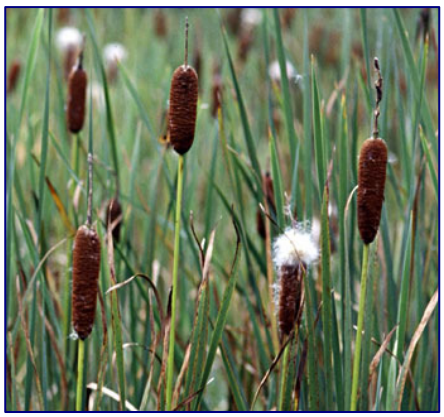
Fungi

There are many types of fungi in the Australian landscape. Some can have beneficial relationships with other plants (mycorrhizal) and others decay the remains of other organisms (saprotrophic).

Water Plants

Water Ribbon (*Triglochin procerum*)
The tuberous roots were roasted and parts of the stems were eaten like celery.

Cumbungi (*Typha domingensis)*
Baskets were made from the leaves. The roots were steamed in earth ovens then peeled, then chewed until the potato tasting starch was gone. The fibre which remained was used to make string.



Common Reed (*Phragmites australis*)
The roots were eaten. The stems were used to make light spears, woven baskets and necklaces.

Nardoo - *(Marsilea drummondii)*
(Kulin language – Dullum-Dullum)
Nardoo grows in water and floodplains. Women roasted and ground the brown spore-cases, and the hard dark spores are separated from the whitish spores. The spores swell when in water and were made into a cake and cooked.

Reading Materials:

Gott B, Conran J, 1991, Victorian Koorie Plants, printed by Program Print, Hamilton Victoria Australia.
Lassak E.V, McCarthy T, 1987, Australian Medical Plants, published by Methuen Australia, North Ryde New South Wales Australia.
Leiper G, Howser J, 1985, Mutooroo Plant use by Australian Aboriginal People, printed by Assembly Press, Queensland Australia.
Royal Botanic Gardens Melbourne, *Education Service*, Teachers Kit - Aboriginal Resources Trail
Zola N, Gott B, 1996, Koorie Plants Koorie People - Traditional Aboriginal Food, Fibre and Healing Plants of Victoria, printed by Brown Prior Anderson, Melbourne Australia.

Activity: To be run by the teacher

Habitat in a River Red Gum

Aim: Look at all the different parts of the tree that are used by different animals.
Make observations about a tree by looking at it.

Equipment: Illustration on the following page.

Discussion: How many different types of animals can you see living in this River Red Gum?
What part of the tree would they live on – leaves, under bark, hollows, in the roots, sitting on a branch etc?

MERRI CREEK MANAGEMENT COMMITTEE

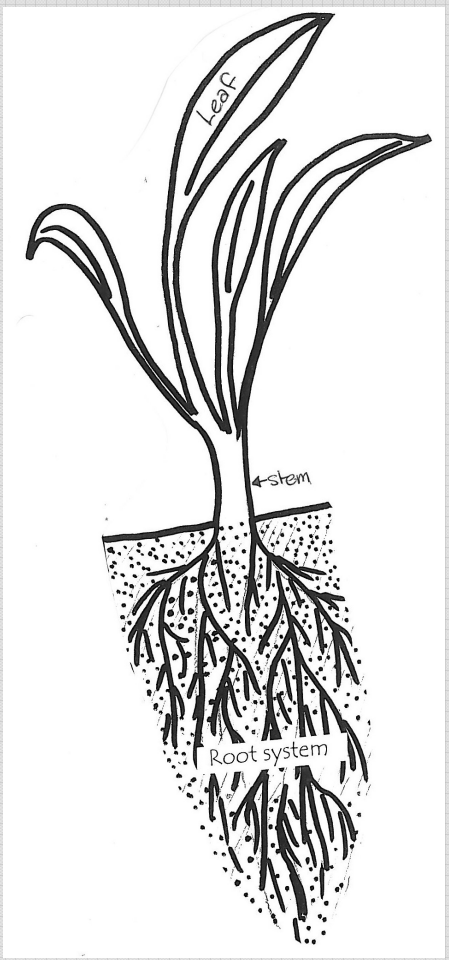
WATERWATCH Melbourne

Botanical Drawing

Aim: Discover different plant shapes, sizes and textures
Learn the difference between weeds and native plants

Equipment: Plants
Paper and pencils
Magnifying glasses (optional)

Introduction: Talk about the different parts of a plant and describe differences between them e.g. leaf shape, furriness, pointy etc.



Session: Students to draw one of the plants in front of them looking at all of the parts, shapes and sizes.

Discussion: What did they notice about the plants when they drew them? Pointy, rough, fluffy etc.

Moonee Ponds Creek Crusaders

MERRI CREEK MANAGEMENT COMMITTEE

WATERWATCH Melbourne

6. FUN IN THE FIELD

Theme: **Discovering the hidden gems of your local environment*
**Using your senses to observe things differently*

Background Information:

This activity is best run down at the creek, so the students are able to explore the local environment. If you are unable to leave the school you could run it in a section of the school yard with trees and as much vegetation as possible.

Activities: To be run by teacher or Waterwatch Officer

Using Senses in the Field

Aim: Students will use many of their senses to discover different ways of observing their surroundings. From magnified views of a leaf to viewing a canopy from underneath using a mirror.

Equipment:
- small mirrors
- magnifying glasses
- paper
- 1 or 2 x feel boxes (with something natural to touch)
- 1 or 2 x smell boxes (with something natural to smell)
- textas

Setup: Collect materials for smell and feel boxes. E.g. Dirt, grass, gum leaves, and flowers. Set up each box with a lid on a table with paper and a texta next to it.

Steps:
1. Introduction – Talk about how scientists use observation as a tool. How many types of observation are there? Discuss the senses.
2. Hearing – Do circle of sound. Get the students to close their eyes and open their ears to listen. Then discuss the different sounds they heard.
3. Touch and smell –student's line up behind one of the boxes and either smell or feel (depending on box) what is inside without looking. Then write or say a word to describe it on the paper, or just say it out loud. Try and get them to think outside the square. Once they have done one they should line up again and eventually do the rest. Then discuss the words they wrote and show them what was in the boxes.
4. Sight – Talk about how you can look at things differently. First get them to look around and tell you what they can see. Then hand out magnifying glasses so they can look closer at things. Then hand out mirrors saying that you can view things from different angles. Get them to hold them under a canopy, or walk with it at the side of their head.

Discussion: Discuss the observations the students made that they had not noticed before the activity.

CREEK CRUSADERS

All along the creek there are people who have devoted their time and energy to the creek. They have formed great friendships while participating in the restoration of the creek and its environs for all to enjoy. In trying to undo some of the damage humans have done to this waterway, they have contributed to retaining sites of remnant vegetation and restoring habitats for the wild life that once inhabited the area. Thanks to their efforts birds such as the New Holland Honeyeater and Reed Warbler, and animals such as the Rakali, (Water Rat) that had become rare in the area, can now be seen or heard in many parts of the creek.

Here are some of the people who form the Creek Crusaders and what they like about the creek.

Kelvin Thompson MP
Kelvin spent his childhood playing along the creek with his brother, and has many memories of the adventures of a wild open space and untamed creek. These experiences spurred him on to protect the creek he loved. For the past 21 years he has campaigned for the creek.

He established the Moonee Ponds Creek Association, which became the Friends of Moonee Ponds Creek in 1989. Kelvin still actively participates in and chairs the Friends of Moonee Ponds Creek, despite many other demands on his time as a Federal Member of Parliament for Wills.

'The thing I like most is riding my bike along the creek and being able to see the results of the work of many committed volunteers such as the Jacana Wetlands, the Strathnaver Grasslands, and Five-Mile Creek.'

John Hughes
John has lived alongside the creek since he was about 12 (26 years) in various locations from Essendon to Gowanbrae.

He plants trees, removes rubbish and weeds, and more than anything he encourages the students and families at his school to get involved in the creek and appreciate it at as a great place to play, rest, exercise or contemplate.

'I like the idea of improving the surrounds for the residents, making the place more inviting for birds and other local creatures, and hopefully doing something towards returning the creek to its former glory.
I used to love watching the water rats swimming around near the bridge at Cross Keys Reserve, but perhaps the most amazing thing I ever saw in the creek was the massive flood back about 5 years ago. Seeing the Jacana wetlands and all the surrounding areas full like that was amazing. The houses along the creek in Gowanbrae were all sandbagging their houses – just amazing'

Nina Eason
Nina has lived along the creek for 27 years. As a child she lived in a house that backed on to the creek, and for the last 15 years she has lived in a house that faces the creek.

Nina has been involved with the creek as a volunteer for about six years, and she really likes seeing how the creek has improved over the years

Nina and her family love to go to the rocks near Nursery Corner, where the kids play on the rocks while the dog sits in the water.

'*I have fond memories of the creek near Strathnaver Reserve. As a child, the grass was so long it was almost above our heads. One of us kids would hold our dog and all the kids in the neighbourhood would hide in the grass. We would then release the dog and it would have to find all the kids all by sniffing its way through the long grass. We would spend hours down the creek, it was great fun.'*

Kaye Oddie
Kaye's involvement with the Moonee Ponds Creek started in 1999 after the construction of City Link had left the lower section of the creek between Macaulay Road and Dynon Road denuded and the rehabilitation revegetation plantings had predominantly failed.

After two years, Transurban organised with Greening Australia, the MPCCC and local residents for the replanting of the banks on the western, Kensington side of the creek. To continue the activities in this area, Kaye was instrumental in the formation of the Friends of Lower Moonee Ponds Creek and she very much enjoys working together with the wider community to green the lower Moonee Ponds Creek.

'What has been most rewarding is seeing the replanted banks of the creek grow so they provide habitat for the birds and create a pleasant open space area for local residents to enjoy, as well as a nice view for cyclists using the bike path on the opposite side of the Creek. It's good too, to know that our small sections of reveg are part of the wider objective to create a green (habitat) corridor the full length of the creek, from its source above Woodlands to where it joins the Yarra River.'

Elissa Simmons

Elissa has been involved with the creek since she was 15 when she used to "hang out" in the Westmeadows region of the creek with her pals. Since 1996 she has been employed as a horticulturalist working with community on the revegetation of the creek. In 2006 she became a volunteer on the creek, as have members of her family (Matt and the kids - Jack & Tahlia).

She likes many things about working on the creek – the satisfaction of seeing revegetated areas flourish and function as wildlife habitats.

'I especially treasure the bonds and friendships formed with other creek community members and past MPCCC staff. Although I know most parts of the creek, I love the upper regions with the River red gums the best. As Glenroy locals my family and I enjoy our Jacana Wetlands section - the birdlife is fantastic! I have fond memories of sitting under a yellow gum nursing my baby daughter and listening to the pobblebonks and a growling grass frog. But there are also sad times like when an arsonist set fire to the Friends of Upper Moonee Ponds Creek planting area - even though it was devastating, the Friends group folk have never given up.'

Here are some other Creek Crusaders from planting events along the creek. They bring together corporate groups, community groups, scouts, conservation groups, students from schools and colleges.

Moonee Ponds Creek Crusaders

VICTORIAN ESSENTIAL LEARNING STANDARDS

Activities	VELS Level	Health & Physical Education	Interpersonal Development	Personal Learning	Civics & Citizenship	The Arts	English	Humanities	Information & Communication technology	LOTE	Maths	Science	Communication	Design, Creativity Technology	Thinking Processes
Not So Long Ago	1 - 2						✓	✓		✓					✓
Creek Habitat	1 - 2			✓	✓		✓	✓			✓	✓	✓	✓	✓
Litter Stinks	1 - 2		✓	✓	✓		✓	✓			✓	✓	✓		✓
Waterbug Discovery	1 - 2	✓	✓	✓		✓	✓				✓	✓	✓	✓	✓
Fantastic Frogs	1 - 2		✓	✓		✓	✓					✓	✓	✓	✓
Precious Plants	1 - 2			✓		✓	✓				✓	✓	✓	✓	✓
Fun in the Field	1 - 2	✓	✓	✓			✓	✓				✓	✓		✓
Creek Crusaders	1 - 2				✓		✓	✓							✓

Moonee Ponds Creek Crusaders

MERRI CREEK MANAGEMENT COMMITTEE

WATERWATCH Melbourne

MOONEE PONDS CREEK CRUSADERS

Teacher Evaluation

This survey is to collect information about the Moonee Ponds Creek Crusaders (MPCC) program so that ongoing improvements can be made to this new program.

School Name / Grade_____ **No. of students**_____

1. **Why did you decide to become involved in the MPCC program?** Tick 1 or more options

- ☐ It supported the curriculum topics I wanted to cover with my students
- ☐ It offered students a new learning experience
- ☐ It offered me teaching support
- ☐ I have used Waterwatch before
- ☐ Other (please tell us why) _____

How well did the program do the following?

Circle the applicable number on the scale and provide a comment if you wish.

2. Align with your curriculum topics and learning objectives?

Not at all 1 2 3 4 5 Very well

Comment…….

3. Provide a valuable learning experience for students?

Not at all 1 2 3 4 5 Very well

Comment…….

4. Present information in a style appropriate to students' age and ability?

Not at all 1 2 3 4 5 Very well

Comment…….

5. Engage the students?

Not at all 1 2 3 4 5 Very well

Comment…….

6. Raise the students' knowledge of waterway health?

Not at all 1 2 3 4 5 Very well

Comment……..

Moonee Ponds Creek Crusaders

MERRI CREEK MANAGEMENT COMMITTEE

WATERWATCH Melbourne

7. Which activity or aspects of the program were most effective for you students learning? Why?

_____

_____

_____

_____

_____

8. Is there anything that could have been improved in the program?

_____

_____

_____

_____

_____

9. Overall, how worthwhile was participation in the Moonee Ponds Creek Crusaders program for your students?

Not worthwhile 1 2 3 4 5 Very worthwhile

Why?

_____

_____

_____

10. Further comments

_____

_____

_____

_____

_____

Please return to Merri Creek Management Committee
*By **fax**: 9380 6989 or **mail**: 2 Lee Street, Brunswick East, VIC, 3057*
*or **email**: jane@mcmc.org.au*

Thankyou for your time

Moonee Ponds Creek Crusaders

MERRI CREEK MANAGEMENT COMMITTEE

WATERWATCH Melbourne

APPENDICES