SPRING 2017
Newsletter No.51

Newham & District Landcare Group

Working towards a healthier environment

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Address – PO Box 314, WOODEND, 3442

Turning your Dam into habitat

DIARY OF EVENTS

We have had some splendid NDLG events this year, the final one being the end of year BBQ. In the next issue we will report on two fascinating events held in November – with Andrew Skeoch Listening to Nature, and how a workshop on native pastures with scientist Dr Paul Gibson-Roy has inspired some of us to take radical steps to preserve and reconstruct them on our own land. Your committee is planning for 2018, stay tuned for announcements of dates for Karl Kny on "How forests can save the planet", a session on raptors with Leigh Valley Hawk and Owl Sanctuary, Jim Sansom on climate change and sustainability, a forum on our future strategy…

2018 events

23 February: BBQ at Newham Primary School. **4 March:** Clean Up Australia.
April tba: Hanging Rock planting. **10 August:** AGM. **1 December:ß** Xmas BBQ.

Call for photos

Your committee has purchased an external hard drive to hold all our Landcare photos. We would love it if you could scour your digital archives and put together any photos of activities you have taken and are prepared to share, with a statement saying you give permission to use them. We are always looking for photos for newsletters, displays, and most particularly the website which will be revamped. Please leave as original size, not shrunk. We can lend a USB stick, or copy from yours, or you could email if only a few, to either Penny or Helen.

Group contacts

President: Nick Massie. **Vice President:** Karl Kny. **Treasurer:** Hilary Roberts.

Committee members: Doug Dalgleish, Penny Roberts, Jim Sansom and Howard Stirling.
Please consider nominating for the committee as there are spaces vacant.

Secretary, Website: Helen Scott.

New members, general queries: Penny Roberts; 5427 0795.

Roadsides: Sue Massie; 5427 0065.

Newham Primary: Jenny Waugh; 5427 0408.

Animal pests: Replacement to be confirmed. *Thanks to John Luckock for his contribution to the rabbit eradication and Indian Myna programs. We wish him all the best for his move to Barwon Heads*.

Wesley Park: Fran Spain; 5427 0661.

Flora, library, small tools, grants: Penny Roberts; 5427 0795.

Spray trailer: Currently held by the Roberts family. Contact Penny on 0418396837.

Website: http://www.newhamlandcare.info/

The committee meets on the first Monday of the month (February to December) between 7.30 – 9pm in Newham. All members are welcome to attend the Committee meetings to become more involved or raise specific matters. Please advise a committee member if you wish to attend. Meetings start and finish on time... and we enjoy them!

Road warriors

Continuing the theme from the last newsletter of "Bush Rangers on Rural Roadsides" here are some recent NDLG roadside activities.

A team of ten (pictured below) worked along Whitebridge Road between Bolgers Road and Hennebergs Lane on 31 August, at the request of the Shire. Prior to this we had meetings with Shire officers to discuss the least destructive ways of controlling native tree growth on the road edges that posed a safety hazard. The protocols we agreed were to remove saplings and suckers within 50cm of the road edge, to cut only on one side, and cut and paint stems with herbicide on the other, and later compare results. Bruce Hedge is documenting with photographs at reference points.

We followed up with a request to the Shire for the woody weeds (mostly gorse and broom) on Whitebridge Road to be removed in this year's program and have had a positive response. However we are still noticing many piles of dumped material from roadworks on top of sensitive vegetation and have documented our concerns on Whitebridge Road with photos and requests for removal.

Bush rangers Alice, Helen, Penny and Hilary attended Landcare Victoria's first regional forum – North Central Regional Landcare Forum, in October at Camp Seed near St Arnaud. Penny Roberts was Friday night's guest dinner speaker on the topic "Keeping groups vital – the social side of Landcare". She gave a marvellous illustrated presentation about the history, activities and successes of our Newham Landcare group, making the point that building personal connections, through organized social activities between members and the community at large, is fundamental to maintaining interest and enthusiasm in the Landcare groups activities.

A poster session on "Telling the story at the local level" was an informative display of the huge amount of work done by Landcare groups in the north-central area. Sandy Scheltema's photos of our Upper Campaspe Landcare Network were outstanding. Helen designed a poster outlining NDLG's story about our work conserving rural roadsides.

Saturday's bus field trip took us through the threatened box-iron bark ecosystem and York Plains wetlands. We stopped at Victoria's oldest woolshed at Tottington and saw the site at Winjallock where Landcare was officially launched on 25 November1986 by Joan Kirner and Heather Mitchell. The Indigenous cultural heritage significance of many sites on the Avon Plains was evident, for example ochre and flake scatters on lake edges, clay-fired balls for cooking heat, and scarred trees and trees with hollows used for smoking out game.

As vast areas of the northern plains were cleared for agriculture, we couldn't help noticing roadsides bare of trees and shrubs and often ploughed. The native vegetation remaining on private land provides irreplaceable habitat for native plants and animals and North Central Catchment Management Authority and Landcare have managed major projects targeting protection of grasslands, grassy woodlands and seasonally herbaceous wetlands.

Some of our best conserved rural roadsides are a picture this season, with abundant wildflowers and many 'tiny wildernesses' to spot. Take a look at any near you and consider what you could do for your roadside!

Helen Scott

Turn your dam into habitat

A large crowd gathered on a cold night in Newham to eat, drink and be merry and hear ecologist Damien Cook talk to us about rethinking dams and learning about wetlands.

Imagine seeing Brolgas again! They were once in Victoria's seasonal herbaceous wetlands which are being lost to drought, and cropping (being shallow they are too easy to drain). They could come back if more habitat is restored or created. The Brolga prefers to breed in wetland areas that are about 30 centimetres deep with aquatic plants about 90 centimetres in height.

Basic habitat needs for wildlife are clean water, food sources, shelter from exposure and predators, varied microhabitats for sheltering, feeding and breeding. Did you know that between a third and a half of native fauna need tree hollows?

Damien described types of wetland habitats – perennial streams and rivers (e.g. Deep Creek); shallow freshwater meadows which provide seasonal wildlife habitat; deeper freshwater marshes, up to a metre deep; and seasonal drainage lines.

An important part of wetland habitats is vegetation. Wetland plants come in a range of life forms:

- Submerged
- Floating non-attached
- Floating attached
- Emergent
- Mudflat colonists
- Woody species – trees and shrubs

To manage wildlife habitat on your property Damien suggested:

- retain and re-plant indigenous vegetation, particularly wetlands and water courses
- maintain natural hydrology – don't drain wetlands or block wetland overflows. Wetting and drying of wetlands is important for nutrient cycling, plant recruitment and maintaining diversity. Too many dams rob the natural flow of water
- minimise nutrient and chemical runoff into wetlands and watercourses – by creating a vegetated buffer for example, ideally 50 metres wide or more
- maintain micro-habitat diversity, avoid cropping in or around and removing logs, rocks and leaf-litter
- control and prevent spread of pest plants and animals
- manage grazing to protect native vegetation. Fence off wetlands and water courses and avoid grazing when they are inundated .

None of this rocket science, but is not done often or consistently enough.

Providing suitable habitats around and within a farm dam may provide for a wide range of wildlife including birds, frogs, bats and other mammals, lizards and snakes, fish, yabbies and a wide range of insects such as butterflies and dragonflies. Mosquitoes are consumed by wetland predators – unlike those breeding in guttters or pot plant saucers!

Damien illustrated guidelines on planning your own project to create frog habitat.

1. Design and draw a plan and decide what to plant
2. Source your plants, from seed for example to grow yourself, or a supplier – see photo
3. Prepare the area or planting – dig the pond or modify an existing dam, control weeds and prepare soil for planting
4. Install plants, and habitat of logs, rocks …
5. Guard the plants from water birds
6. Control weed invasion and pest animals
7. Relax and enjoy watching your habitat develop

It is difficult for plants to establish in traditional dams, so consider creating planting benches when the water level is low. Timing is important – water edge plants like grasses, sedges and rushes are best in late Winter and early Spring, optimum density 5-6 per square metre; aquatic and deeper water plants in Spring or Summer, optimum density 2-4 per square metre. Temporary enclosures can be used to protect young plants until they are established enough to tolerate grazing pressure from water birds, which usually takes about three to six months.

Penny organised a display and sale of aquatic plants, sourced from Ian Taylor's Western Plains Flora Nursery, Gisborne.

Damien is Senior Ecologist at Rakali Ecological Consulting, operating since 2012. He also established and ran Australian Ecosystems Pty Ltd, an ecological restoration company with its own large scale indigenous plant nursery up from 1997 until 2012. He is a recognised expert in wetland, riparian and terrestrial ecology, particularly in the factors affecting the establishment and management of aquatic and wetland plants, and also the revegetation of terrestrial ecosystems.

Damien has kindly allowed us to use his material for this article, and to make it available to those who want more information – contact Helen or Penny if you want any of the following:

- *A Guide to Managing Livestock Grazing in Victoria's Wetlands. Decision Framework and Guidelines, v. 1*, Arthur Rylah Institute for Environmental Research Technical Report Series No. 26, DELWP, 2015
- *Wildlife and farm dams*, Land for Wildlife Note no.15, Nov. 1992
- *Enhancing farm dams* by Judy Frankenberg, Murray-Darling Freshwater Research Centre
- *Turning your Dam into habitat* – pdf presentation

You can also go to www.rakali.com.au for information, to read articles and see photographs, or to register for one of Rakali's courses on wetland ecology and management.

Helen Scott.

Dr Sophie Bickford, Executive Director of the Biolinks Alliance, was guest speaker after our AGM on 18 August. She has kindly supplied the following summary of her presentation.

Climate change and conservation of species – with a focus on the Newham Region: "From Islands to Networks"

Nature is under great pressure to change herself. Although species have responded to climate change throughout their evolutionary history, the great concern is the increased *rate* of current changes and the *magnitude* of predicted warming over the next 100 years. The rate of current change is 20 times faster than experienced in the last 1000 years. Temperatures of 3°C warmer than today (we are on track for this rise with current carbon emissions) have not been experienced by species through their history.

A key question for nature conservation is how can we ensure that nature survives the predicted climate changes we face and how can we assist?

Conservation scientists have been considering this question for the past few decades. Our knowledge of genetics and adaptability, climate and species distribution predictions and how species are already responding to climate change is providing clearer insight around potential impacts and how we need to help.

There are three key climate adaptation strategies that we need to keep front and centre of mind when we think about what conservation actions are most important to take in a landscape.

Connecting patches of habitat – biolinks

Species have moved to deal with climate change in the past but they need a connected landscape allowing passage to be able to do so. Habitat in our current landscapes is highly fragmented – in Victoria 90% of our significant habitat is highly isolated.

Isolated habitat patches are problematic in a number of ways from a climate change adaptation perspective. The populations of the species they support can become inbred – less genetically diverse – and we know that a key factor in allowing species to adapt to any change is genetic diversity.

Secondly climate can predict up to 80% of whether or not a species will occur at a location. That is, climate is the primary determinant of where species occur. So, as it changes it makes sense that species will also have to change their location. In the past they have done this through dispersal and migration. However, this requires animals to be able to safely move – or plants to be able to disperse from patch to patch. Studies in Australia have shown that species ranges are already shifting in relation to climate change – a study of 400 bird species showed that species ranges changes have shifted southward (polewards) and easterly (up to higher elevations on the east coast) by a massive 200-400km over the past 60 years!

We need to re-connect habitat to maintain genetic diversity and allow species to migrate over hundreds of kilometres. This is of course understood by many – and is already the focus of many conservation projects in Australia. We now have much more scientific evidence around how to design connections that work. The current focus is around *connecting diverse patches of habitat* – with various elements of the landscape acting as effective connectors (eg large paddock trees, rivers and creeks, roadsides), rather than planting linear corridors of forest that connects two patches of forest. (See www.biolinksalliance.org.au for CSIRO Functional Connectivity Model).

Maintain the flexibility to change – genetic diversity

Our Reserves – the larger more undisturbed habitat patches acting as bastions for large populations, are more important than ever in the face of a changing climate. They need to be managed, protected and connected. In some instances, populations of key species have diminished or been lost from them and they may need re-introduction to fulfil their role in maintaining a maximum amount of genetic diversity and providing the flexibility to adapt to a changing climate.

Climate refuges

Australian plants are not as highly dispersive as those in the northern hemisphere, and it is believed they have withstood millennia of climate change through expanding and contracting their ranges from 'climate refuges'. These refuges are often the higher elevation and more topographically diverse places in the landscape. The

Biolinks are not linear lines of trees connecting patches of forest, rather they are linked patches of habitat (ideally 10 hectares or greater in size) no more than 1 – 1.3km apart. Scattered trees no more than 100 metres apart provide connectivity between patches for woodlands birds and arboreal marsupials.

Grampians and the Otway Ranges are examples of such areas in Victoria. We need to identify these places and make sure they are given special consideration.

What does this mean for the Newham region?

The Newham region can be considered a region of extremely high conservation value and thus a region that we should be focusing our conservation efforts on.

It is considered of high value because:

- it contains unique habitat types (eg Scoria cone woodland – its conservation is thus dependent upon this region)
- it has good building blocks ie larger patches of protected habitat (eg the Cobaw and Macedon Ranges Forests) and supports populations of important species (eg Phascogales, Greater Gliders)
- it is a southerly and high elevation region – somewhere likely to be a long-term refuge for species under a warming climate.

The regions habitats are highly fragmented so to restore gene-flow between them and allow species to move, a focus on restoring habitat connectivity is crucial to securing the region's natural values.

This brings a focus on the importance of the smaller patches of habitat, such as that on the Hanging Rock reserve, on roadsides and on private land – that remain between the larger Cobaw and Macedon Ranges. They are extremely valuable as stepping stones for movement, or as habitat for generalist species, and are the building blocks for reconnecting the landscape.

The renowned biologist E.O. Wilson wrote *Half the world for Humanity, half for the rest of life, to make a planet both self-sustaining and pleasant*. This number gives us a target of just how much habitat needs restoration and protection – the region has less than 30% of native vegetation cover, and most of that is Dry Grassy Forest – with only 2% of the original grasslands left (they once accounted for 50% of the region's ecosystems).

The work being done to protect and reconnect the landscape in the Newham area is vital to saving local species and in providing key linkages at larger-scales; the scales we need to restore to allow species to adapt to climate change. Newham Landcare is part of the Biolinks Alliance – a partnership to connect the Grampians to the Victorian Alps. www.biolinksalliance.org.au. The Alliance works to help foster collaboration and provide the science and planning for effective conservation at large-scales.

Identification lesson on Three Chain Road.

Chilean Needlegrass Workshop

On 11 November a Chilean Needlegrass Workshop was conducted by Beau Kent, Natural Resources Officer, Macedon Ranges Shire Council, at the Carlsruhe CFA. The workshop was organised in conjunction with the Carlsruhe and Newham District Landcare Groups, to assist in the identification of this high impact agricultural and environmental weed. More than 30 residents of the Shire attended and consulting ecologist Daniel Young addressed the issues raised and explained the threat posed by this plant to pastures and animals. Penny Roberts described Newham Landcare's activities in dealing with observed outbreaks.

Chilean Needle Grass is a perennial tussock forming grass native to South and Central America and thought to have been introduced to Australia in the 1930s. It is a vigorous competitor in agricultural, natural and urban environments and for this reason is a 'Restricted' noxious weed in Victoria.

This means Chilean Needle Grass plants or any product contaminated with the seed, cannot be traded or transported. The MRSC has implemented a Vehicle Hygiene Zone in several areas of the Shire, with vehicle brush down points where the Council and contractors can thoroughly clean their vehicles to prevent migration of the seeds outside these zones.

The presence of Needle Grass can have a devastating impact on agriculture as it can severely reduce pasture productivity, contaminate crops and hay, and the needle-like seeds injure animals as they burrow into their skin, eyes, feet, mouths... thus ruining grazing pasture. A single plant can produce as many as 22,000 seeds and also has stem and basal seeds which means it has a large and persistent seed bank.

The best time to indentify Chilean Needle Grass is when it is flowering in Spring when the distinctive purple panicle seed-heads and long light green awns are clearly visible. For assistance in identifying if you have this grass on your property or roadside, please contact your local Landcare Group and/or the MRSC. There are several ways to address an infestation of this weed by manual removal of the entire plant or if a very large area is infested by chemical treatment and again Newham and District Landcare group and the Council will provide advice on the best way to deal with the issue.

An excellent, informative booklet on the subject of Chilean Needle Grass, first published in 2008 by the Victorian Department of Primary Industries, was edited and adapted in 2015 by Campaspe Valley Landcare, Connecting Country and Landcare Victoria to include Texas Needle Grass and local case studies. Copies of "A Ute guide to Chilean and Texas Needle Grass" are available from the MRSC.

Addendum

A group of nine from Newham and Carlsruhe Landcare groups spent a few hours on the morning of Monday 20 November removing, and bagging to burn, many Chilean Needlegrass plants from spots marked by Consulting ecologist Daniel Young on Three Chain Road. We will follow-up with a spot spray if necessary. One of the management difficulties is that some landholders mow the verges so the grass heads are no longer visible, and this also increases the risk of spreading seed.

Common Fringe Myrtle (*Calytrix tetragona*)

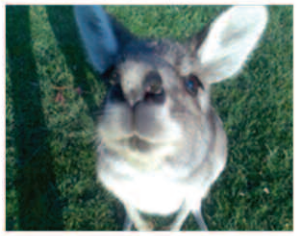
Present to the north of the Jim Jim and on the Three Chain roadside, the Common Fringe myrtle is member of the family Myrtaceae found wild only in Australia.

For most of the year its appearance is neat but undistinguished, but this species makes a spectacular flowering display in October – November, of massed white flowers clustered along arching branches and often obscuring the leaves. Bees love it! The fringed effect is given by the calyx which tapers into points behind each five-petalled, starry flower, in the centre of which is a cluster of prominent stamens.

This is followed for some weeks by an equally decorative display of shiny bronze-purplish calyces with long curling threads. Its tiny, bright green leaves are slightly fleshy with a spicy perfume when bruised. New young tips are yellow-green.

Propagation is by cuttings and the propagating group has been successful in growing this species – *it will be available next Autumn to members to members*.

Brigitte's Wildlife Blog



Recently our Newham Landcare member Steve Krstic passed away. I first met Steve decades ago when he was still a practicing vet in Romsey. Caring for wildlife usually starts with a rather traumatic incident for the animal and a good local vet is an essential part of successful rehabilitation. Over all those years Steve has treated broken bones and wings of my little charges and always helped me with advice and guidance.

One of my more unusual wildlife difficulties Steve and his team at the Romsey Vet Clinic had to deal with was when a little Eastern Grey joey started losing weight and condition rather rapidly and was eventually found to have an intestinal parasite.

Kalina came into care because she had a broken pelvis after a car accident. She was a joey 'at foot' – meaning she was already quite independent and her height was bit over my knee. But despite being an older joey she never hissed or tried to scratch us when we changed her bedding and was the sweetest little thing one can imagine. Her name Kalina means "to love" in one of the Aboriginal languages of Northern Victoria. And she sure needed lots of love and care. It took weeks for her to be able to stand and eventually shuffle a few meters.

When she came into care she had those tiny little white worms – no big deal there, she just got a vet-recommended dose of de-worming medicine. But when we were away for a few days our baby-sitting wildlife friend spotted the first evidence of tapeworm in Kalina: segments on the ground next to her droppings. (To prove that she was not imagining these things, Tania left us some samples in a glass of Karl's BEST whisky on my kitchen bench !!!)

It took 2 more doses of de-worming stuff for this whopper of a tapeworm to detach itself from her inside and pass through the system to end up one morning on her bedding. I swear it was around 1.5 meters long !!!

I went to Steve who knew this renowned expert in intestinal parasites and my carefully collected bits were sent to him to find out if we got the whole thing, top and bottom. And yes, we did and apparently Kalina also had the dubious honour of having had the longest tapeworm this expert had EVER seen in a joey of her size. And for years after this tapeworm was kept floating in a glass jar of formaldehyde (or what-ever) and featured prominently on a shelf at the Romsey Vet (and probably still does).

And yes - Kalina made a full recovery from all her ordeal and is now released.

But the story does not quite end there. A few weeks after Kalina passed her noteworthy tapeworm, I developed some sort of weird droopy reddish swollen eye. Luckily we have internet connection and I Googled my symptoms. And sure enough all

my research pointed to that I had a tapeworm in my eye – prognosis not very good. Of course I rang immediately the hospital in Kyneton and booked an appointment with the local doc who was not that pleased having to rush to my emergency on a weekend.

The experience at the hospital was traumatic and rather distressing for me. I had to wait two hours for the doc to show up and had to fill out stacks of various release forms. And while I tried not to think of my looming doom, I noticed that when I told the other waiting patients (who "just" had broken limbs) of my concern they moved away from me AND the nurses stared at me like I was some sort of rather weird and disturbed person.

Eventually the doc saw me, diagnosed conjunctivitis and sent me home with a little tube of eye ointment for conjunctivitis and the assurance that unless I lived in a certain under-developed small area in Africa in appalling hygiene condition I definitely had no tapeworm in my eye. What I got though was a substantial bill – due within 7 days.

I was too embarrassed to tell Steve about this little episode in the hospital. He sure would have found it very very amusing.

Vale Steve. Thank you so much for your support of our wildlife.

Professor Karoly's talk on climate change

Professor David Karoly (Atmospheric Science Melbourne University) visited Newham Landcare in August 2016. At the end of his talk on climate change, people attending were invited to fill out a card making suggestions about what measures could be taken here in Newham. Altogether 87 suggestions were made.

The cards were sorted and (thanks to Ian Scott) the following themes became clear:

1. Land management practices.
2. Education.
3. Technology.
4. Politics.
5. 'Must do' measures.
6. Things to consider. For example: a community audit to take practical ideas and convert into practice; waste management; practical yet simple ways to save energy in the home etc.

It is obvious that Newham Landcare and the Newham community as a whole has a wealth of knowledge and is very concerned about global climate change.

As we move into 2018 a major focus for our group will be to convert the theory into practical actions.

Jim Sansom

Biodiversity strategy for the Shire

NDLG welcomes Macedon Ranges Shire Council's appointment of Krista Patterson-Majoor to develop a Biodiversity Strategy for the shire by the end of next year. Krista is a local well known to many of us via Woodend Landcare and through her work as a director until 2017 at Connecting Country in Mt Alexander Shire (https://connectingcountry.org.au/). (Connecting Country was the recipient of the Victorian Landcare Network Award in September and was pictured at Government House with our own Penny Roberts).

According to the environment strategy, the biodiversity strategy will include (but is not limited to):

- Developing a biodiversity monitoring program for the Shire, to enable baseline data to be determined, impacts of management to be measured, and changes in biodiversity status to be tracked. The monitoring program may include environmental indicators as appropriate.
- Preparing a landscape connectivity plan.
- Reviewing the application and effectiveness of local planning policies and controls for biodiversity in the Macedon Ranges Planning Scheme, including the potential to introduce additional provisions to address gaps in biodiversity protection.
- Developing a program for the protection of threatened vegetation communities, e.g. the Western Basalt Plains Grassland EVC (Ecological Vegetation Class).
- Identifying means to minimise threats to biodiversity.
- Analysing the likely impact of climate change on the Shire's ecosystems and identifying adaptive management responses.

All music to our ears. At this stage Krista is developing a project delivery and consultation plan, and is keen to work with NDLG.

Helen's Footnote: What is biodiversity?

Biodiversity is a contraction of biological diversity. Biodiversity reflects the number, variety and variability of living organisms. It includes diversity within species (genetic diversity), between species (species diversity), and between ecosystems (ecosystem diversity). (Greenfacts.org)

"Biodiversity" is most commonly used to replace the more clearly defined and long established terms, species diversity and species richness. Biologists most often define biodiversity as the "totality of genes, species and ecosystems of a region"…. It varies greatly across the globe as well as within regions. (Wikipedia)

Biodiversity is the variety of all living things; the different plants, animals and micro organisms, the genetic information they contain and the ecosystems they form. Biodiversity is usually explored at three levels - genetic diversity, species diversity and ecosystem diversity. These three levels work together to create the complexity of life on Earth…. The best way to conserve biodiversity is to save habitats and ecosystems rather than trying to save a single species. (Australian Museum)

Newham rainfall report

Nick Massie

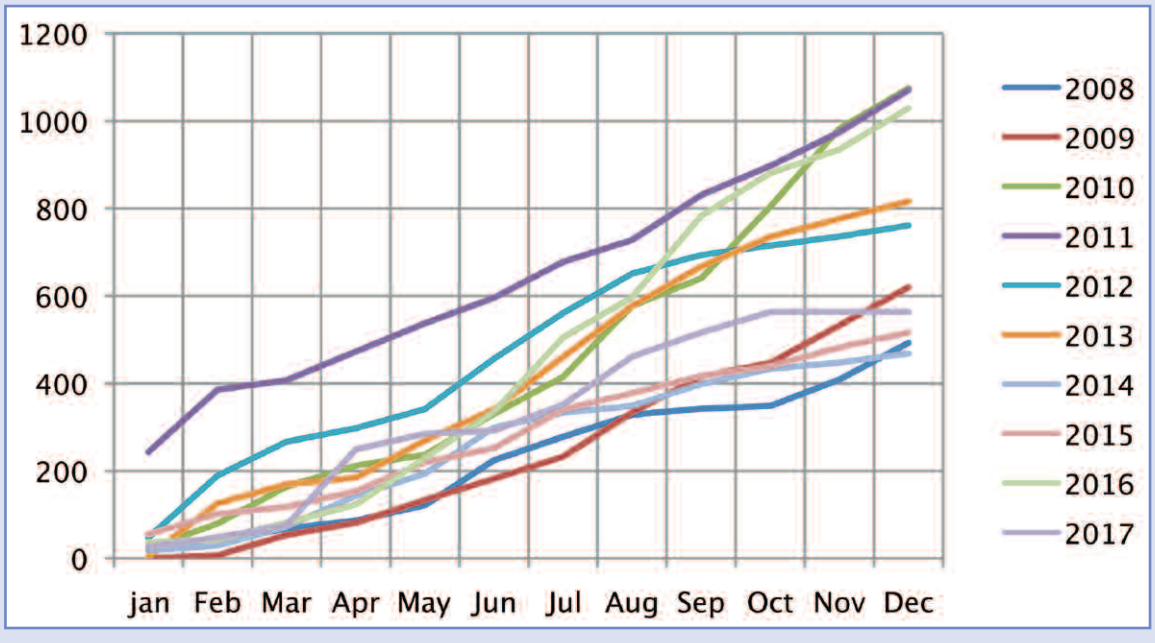
Rainfall this calendar year (to 31 October 2017) totals 563mm. In 2016 the equivalent total was 880mm. The long term average for my property at Newham is 611mm (years 2008 – 2017). Of particular note was the exceptional low rainfall for June of 7mm and the 110mm for August. The graph below this year is trending to be mid way between the very wet years of 2010 and 2016 and the dry years of 2008 and 2014.

My records of temperature mean show no discernible trend of long term change.

The table below lists the monthly totals since 2008.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2008	25.5	12.5	30.5	18.0	35.0	103.0	53.5	50.5	14.0	6.0	60.5	84.0	493.0
2009	0	7.0	46.5	28.0	52.0	48.5	50.5	101.0	82.5	31.0	86.0	87.0	620.0
2010	23.5	56.0	85.0	47.5	25.0	93.0	85.0	162.5	63.0	163.9	178.4	92.0	1074.8
2011	243.4	142.4	21.6	65.6	64.5	58.3	82.2	50.2	102.6	66.6	77.4	96.2	1071.0
2012	47.6	141.8	77.6	30.6	43.8	115.0	104.4	90.4	42.6	21.4	21.0	25.2	761.4
2013	3.6	122.4	43.2	15.4	85.0	71.0	120.2	116.4	90.2	68.0	41.4	39.6	816.4
2014	18.2	11.2	43.6	70.2	50.6	105.6	33.8	15.6	49.8	34.8	14.6	21.0	469.0
2015	55.2	46.4	16.2	35.8	66.4	32.0	88.6	37.4	39.4	22.4	42.8	34.2	516.8
2016	37.6	5.2	38.8	41.4	106.6	105.6	170.0	92.2	186.0	97.4	54.2	94.6	1029.6
2017	27.0	21.0	28.2	173.2	35.6	7	59.6	110	55	47			563.8

The cumulative monthly totals are below. The current year is trending to be about 790mm for the year.



The weather was less than ideal for our end-of-year gathering on 2 December, however over 60 adults and 20 children enjoyed the event. Our Egg Toss event was replaced by a lime toss in the hall – won by father and son duo, Howard and Warren Stirling. Due to space restrictions the Wellie Toss was ditched this year! The food was fantastic as usual.

This is the first time in 13 years that we have needed to use the hall. To fit our usual crowd of 120 plus in might have taken the noise level 'over the top' but we now know it is feasible.