



Historical rubbish can be exciting ... in more ways than one by Wendy John

Recently, over a period of three weeks, a major effort was undertaken by City Parks Services workers to remove historical rubbish from Oakley Creek. They cleared out and sorted around seventy truck-loads of rubbish, between Pak'n Save and Phyllis Reserve, some of which had been in-situ for decades. Approximately twelve of these truck-loads were recyclables.



This old wagon was excavated during the rubbish removal. Built to run on rails, it may have been used as a ballast wagon in a quarry. We are not sure whether any of the Oakley Creek quarries had rails laid. The wagon may have originated from the quarry on Mt Albert and then been dumped at the creek later. We are researching this further.

Photo: A. Stanton

There was an eclectic mix of rubbish, made up of all sorts, shapes and sizes. However, much to the surprise of the team, an old, discarded aircraft 'ordnance' (weapon) was uncovered in Phyllis Reserve, just six to seven metres away from the path. The team cordoned off the area and the police were alerted. The bomb disposal squad was then called in, to deal with it. It seems the weapon was live when it was discarded, as it still had a detonator. Fortunately, over time, the detonator had corroded and had become inert.

We would like to say a special 'thank you' to everyone involved in this huge effort.

*Right: Before and after - what a difference!
Photos: T. Nehua-Harawira*



Oakley Creek aquatic plant survey

Mary Stewart, Greg Hoskins and Kate Leggett, from Auckland Council Biosecurity, recently took a walk along the stream from the New North Rd railway culvert to Waterview Downs. Unfortunately, they did not see any native aquatic plants, only weeds ... However, they hope to continue the survey down to the end of the walkway, in the future, to investigate further.

See Mary's article on p. 3 to learn more about aquatic plants, including those they saw at Oakley Creek.

Waterview shared path

Planning is well advanced for the shared cycling and walking path to be built along the Oakley Creek corridor from Alan Wood Reserve to connect with Great North Rd at Alford St in Waterview. The path is part of the SH20 Waterview Connection mitigation to connect communities. Some details are available on the Auckland Transport website <https://at.govt.nz/projects-roadworks/waterview-shared-path/> Friends of Oakley Creek supports the general concept and route of the path. However, we do have concerns about effects on the mahoe rock forest and Significant Ecological Areas, and about the utilitarian bridge designs, especially for the very large Alford Bridge.

Need an inspiring gift idea?



Give a tree to plant on Oakley Creek ...

Just \$20 gives:

- a **native tree** to be planted at Oakley Creek Te Auaunga on your behalf (or by your recipient or you)
- an **attractive commemorative card** with the details of your gift
- **Friends of Oakley Creek Te Auaunga Membership** for one year

Email your order to info@oakleycreek.org.nz or ph 815 3101, Payment details are listed at the bottom of this newsletter.

Dates for your diary

Bring your family and friends - and spread the word about:

Friday, 19th Sept, 8.00am-1.00pm: Wairaka Stream / Puna 'clean up.' Meet at Te Noho Kotahitanga Marae, Unitec.

Saturday, Sunday 20th-21st Sept, 9.00am: Rodent Monitoring. Meet at the Unitec Student Residence carpark, near Building 76.

Sunday, 5th Oct, 10.00am: Community Spring Clean Up, as part of Keep Waitakere Beautiful 'operation spring clean'. Meet at the Unitec Student Residence carpark, near Building 76. Please wear sturdy shoes.

Thursday, 9th Oct: Night Fish Spotting Guided Walk. See website for details soon.

Saturday, 11th Oct, 1.00-4.00pm: Auckland Heritage Festival Oakley Creek Guided Walk. Meet at 1.00pm at Phyllis Reserve.

Sunday, 2nd Nov, 10.00am: Community Working Bee.

Sunday, 7th Dec, 10.00am: Community Working Bee.

See www.oakleycreek.org.nz or contact Wendy John, by emailing info@oakleycreek.org.nz or phone 815 3101 or 027 232 6454 for more information.

Membership due

More Friends of Oakley Creek Te Auaunga members means more effective advocacy on behalf of the creek and support for the restoration work. Payment details are at the end of this newsletter - thank you.

Committee news

We would like to thank Ross Ihaka, who has stepped down from our committee. Ross has been a valued member since our project started and we will miss his support.

Meanwhile, another founding member, Dominic Hutching has rejoined the committee, having moved back to the area. Already, Dominic has assisted with writing several submissions, including the Proposed Auckland Unitary Plan. Thank you, Dominic.

Stormwater bylaw

A newly proposed stormwater bylaw is now out for public consultation - see

<http://www.aucklandcouncil.govt.nz/EN/licencesregulations/Bylaws/Pages/stormwaterbylaw.aspx> Submissions close on 8 October

Who needs to go up into the Pacific?



After each storm, Oakley Creek has its own great garbage gyre and this is why the October community working bee will take the form of a spring clean up, to 'Keep Oakley Creek Te Auaunga Beautiful'. Hope you can join us on October 5th to help! Details are in the box, above left. And, for more information about Keep Waitakere Beautiful's 'operation spring clean' visit <http://kwb.org.nz/operation-spring-clean/>

Monitoring and pest control by Jane Shand

Along with all the other activities on Oakley Creek aimed at enhancing and protecting a NZ native environment, pest control is active. Thanks to the great team that regularly set, maintain and clear our traps for introduced pests. For the year from 1 July 2013 to 30 June 2014, the team has caught:

Possums	26
Rats	41
Hedgehogs	7
Stoat	1
Rabbits	9

Since the end of June, we have set up a new trap line through Harbutt and Phyllis Reserves and have had great results of catching a number of possums, as well as rats. Thanks very much to Roskill Rovers for this initiative.

Have you heard your first shining cuckoo yet?

There is a research request for people to record sightings or hearings of pipiwharauora this spring. See <http://www.osnz.org.nz/news/cuckoo-study-please-report-sightings>

That was then, and this is now ...



Spot the difference! Chris Kiwi has provided us with a series of photos he took, back in 2000. Here is a view of the Wairaka Wetland area, contrasted with the same view today.

Photos: left, C. Kiwi; right, W. John.

Fresh water aquatic pest plants by Mary Stewart, Auckland Council Biosecurity

Often when we work on pest plant control we focus on the terrestrial pest plants, those that grow on land. We can forget about the impact that aquatic pest plants can have on the in-stream environment. Aquatic pest plants can:

- Outcompete native aquatic plants
- Change stream flows
- Promote stream blockages and flooding
- Change oxygen levels
- Degrade water quality
- Contribute to algal blooms
- Affect fish and insect habitat and survival
- Change the stream ecology
- Reduce the aesthetic appeal
- Restrict recreational activities
- Encourage siltation and debris build up
- Reduce the stream width and depth (NIWA)

We can divide aquatic plants into categories; emergent, free floating and submerged macrophytes. Emergent plants grow out of the water and are often on waterway margins. Free floating plants grow on the water surface. Submerged macrophytes grow underwater and have root systems in the base substrate of the waterway.

Emergent example:

Alligator weed, *Alternanthera philoxeroides* (right), is present in Oakley Creek. It can form dense mats up to 1 metre tall. It has dark green waxy leaves in opposite pairs. Alligator weed is widespread in Auckland and Northland. It can spread into terrestrial areas and is toxic to livestock.

Free Floating example:

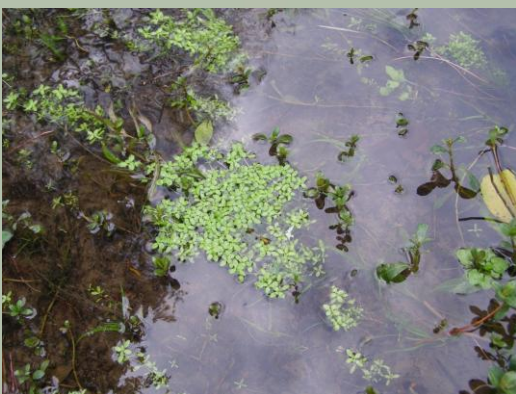


Water hyacinth, *Eichhornia crassipes* (left) is not present in Oakley Creek, but it has been found in the Auckland Region. Each plant consists of a free-floating rosette of leaves and a thick mass of feathery roots hanging in the water. The flowers are mauve-blue. It can spread by seed and vegetatively and grows extremely rapidly.

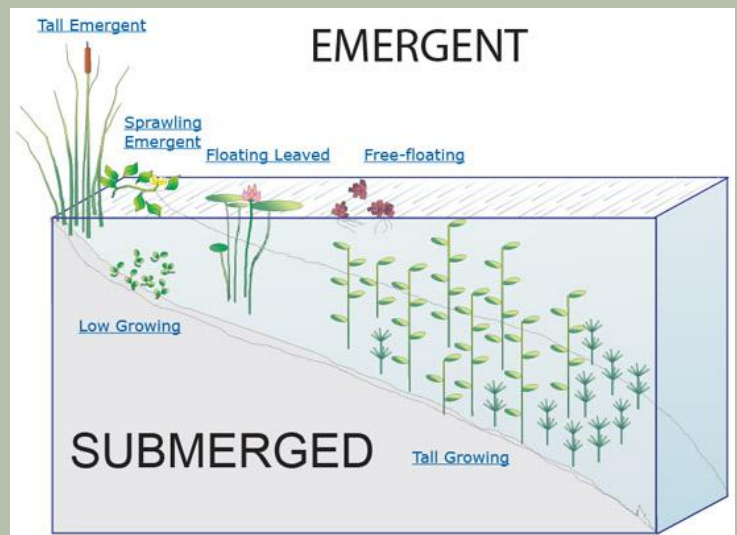
Ministry of Primary Industries (MPI) contracts a control programme aimed at eradicating water hyacinth from New Zealand. Any suspected sightings should be reported to MPI on 0800 80 99 66.

Submerged macrophyte examples:

An **oxygen weed**, *Egeria densa*, is present in Oakley Creek (right). *Egeria* can form dense colonies and can be very difficult to manage. It is denser and leafier than the other common oxygen weeds, *Elodea* and *Lagrosiphon*. *Egeria* has white flowers that form above the water line and does not set seed in New Zealand. *Egeria* is widespread in New Zealand.



Starwort, *Callitriche stagnalis* (left), is another submerged macrophyte pest plant found in Oakley Creek. This is a floating leaved species. It can grow to 1 metre tall in water or like a mat on damp ground. It is widespread in New Zealand.



Aquatic pest plant control There are over 70 introduced aquatic pest plant species in New Zealand. Most streams, lakes and waterways are affected by at least one species. Aquatic pest plants are often difficult to control because of the water environment. Water restricts access to carry out control and the ability to use most herbicides. Manual control is difficult as many aquatic species can grow from tiny stem fragments and some species produce seed. Aquatic pests can also be re-introduced easily from upstream, birds and people.

Control of established infestations can be costly and intervention can make problems worse. Any potential control should be evaluated and planned carefully. Control success is more likely when species are at low incidence and are newly established in an area. It is important for us to find new potential threats early so they can be eradicated before they establish.



View of Oakley Creek as it flows through Walmsley Park, from the top of Mt Albert.

Photo: A. Stanton

Storm water pollution prevention project

Simon Wilkinson has been contracted by the Puketapa Local Board to undertake a stormwater pollution prevention project on Oakley Creek. He has visited local businesses in the Stoddard Rd and Carr Rd town centres to encourage them to be mindful of their stormwater, which drains into Oakley Creek, and to promote the stream restoration work.

New restoration project:

Auckland Council is taking the opportunity provided by a need for stormwater mitigation in the Underwood / Walmsley area to enhance and restore the stream environs. We understand that the local community and Friends of Oakley Creek will be consulted about the details soon.

Basalt rock formation explained

Recently, Wendy spotted this intriguing rock formation in a hidden corner of Harbutt Reserve. Geologist Bruce Haywood has kindly provided the following information:

This is part of the lava flows from Mt Albert that went on down under Unitec, as far as the Waitemata shoreline - to where the motorway interchange is now. The flows went down the old course of the Oakley Valley and, as a result, the present Oakley Creek was formed alongside the harder rock and displaced to the west of its old course.

The photo is not of what would normally be called the cooling and contraction produced columns in basalt lava. This formation is on a smaller scale and seems to occur in viscous cooling, near solid, basalt lava - usually on the edges or front of flow lobes. This "shearing" can be seen in a number of such places, particularly around the steep fronts of the more viscous flows of Mt Eden. I believe it is produced by late stage slight continued movement at the front or edge of the flow, just before the basalt is set hard into rock. I believe it is some of the basalt pulling off or pulling down under the weight of gravity and shearing out the dense toffee like lava into the features you have photographed.

Bruce continues on to commend Wendy for her observations as the formations 'are not particularly common nor noticed by most people.' He also notes that several of the basalt lava flow exposures in Unitec are worthy of protection and a submission to this effect has been made to the Auckland Council Unitary Plan.

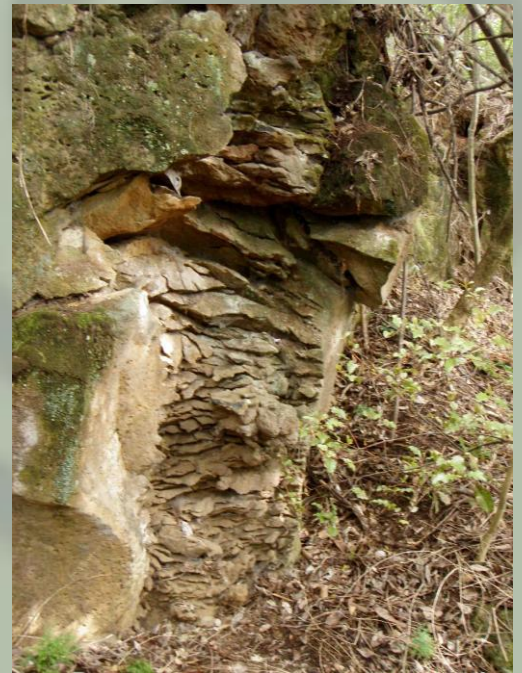


Photo: W. John

Art flow



From left: an art installation at the stream, possibly by a Unitec student; more art at the Oakley Creek 'gallery' in the upper reaches of Harbutt Reserve; and, nature's art: moss covered objects - natural and not-so-natural.

Photos: W. John

New water quality work on the Creek by John Stevenson



Wai Care coordinator Kate Macintosh doing water testing on Oakley Creek, August 2014.

Photo: J. Stevenson

Friends of Oakley Creek volunteers have been doing water quality monitoring for some years at a number of sites along the creek and, this year, have added to this work, after a request by the National Institute of Water and Atmospheric Research (NIWA). NIWA has teamed up with volunteer groups throughout the country and one of the initial aims of this collaboration is to compare monitoring carried out by community volunteers with work done by professional scientists and technicians. More sophisticated methods and equipment are used by the scientists to assess the accuracy and reliability of the volunteers' data. Confirmation of the practicality of using volunteer collectors will facilitate their involvement in more intensive monitoring of the country's waterways in future.

Testing is done every month at a site near the litter trap on the lower creek. Sampling by Kristi Bennett, of Auckland Council's Environmental Monitoring Unit, is done at the same time and this can be used for comparison with our results.

In addition to the weather, rainfall and flow rate, the data being collected includes temperature (air and water), water clarity, pH (a measure of the acidity or alkalinity), dissolved oxygen, conductivity, nitrate and phosphate levels, and more recently, testing for the presence of e-coli (a bacteria that is an indicator of faecal contamination) and analysis of the macroinvertebrates present in the creek. The recent quarterly macroinvertebrate monitoring, produced exciting results (right).

Good ongoing records will, hopefully, give us an indication of the health of our creek and any changes that may occur within it, and also allow comparison to other waterways. Measurable observations of any improvement or decline can signal the effects of changes to the environment along the stream and in the wider water catchment, and help us protect the stream for the future.

The people involved in this work have included: Wendy John, John Stevenson and Dorothy Maddock from Friends of Oakley Creek; Kate Macintosh, Kath Read and Alice Rieger from Wai Care/Morphum; with Kristi Bennett from the Auckland Council Environmental Monitoring Unit. The programme is being coordinated nationwide by Aslan Wright-Stow and Richard Storey from NIWA.



From top left: damselflies, woody caddisflies, a slipper caddisfly (*Oxyethira* - which none of us had ever seen before), native shrimps, plus a water boatman and a round snail (below).

Right: Netting the macroinvertebrates - John Stevenson, Kristi Bennett and Alice Rieger.

Photos: W. John



Water monitoring explained: 2. Dissolved oxygen



John Stevenson needs lots of concentration for the new Dissolved Oxygen test. Photo: W. John

Almost all aquatic animals and plants need oxygen. In fast-flowing turbulent waters, oxygen levels are usually high enough to support even the most sensitive animals. But in slower-flowing waters, oxygen may be reduced by decomposing materials. Human activities may increase the amount of decomposing materials in streams. Also, dissolved oxygen is usually less in warmer water, as warm water can hold less oxygen and the warm temperatures speed up decomposition.



As a rough guide, oxygen levels less than 6 mg/L, 4 mg/L and 2 mg/L (or 6, 4 and 2 ppm) are expected to cause slight, moderate and severe effects, respectively, on native fish, trout and macroinvertebrates.

In streams with plenty of algae or aquatic plants, the lowest oxygen levels usually occur in the very early morning, since those plants take up oxygen at night (by respiration), then produce it during the day (by photosynthesis).

Wai Care Field Manual (2003)

Mixing and matching

An unusual feature of New Zealand's flora is the high proportion of species (about 13%) which are dioecious - with separate male and female individuals - compared to that in other parts of the world (<5%). There are also many other possibilities in the arrangement of plant gender. This is an important consideration to factor in when planning restoration planting, especially when only a few individuals of a particular species are available. For example, to increase species diversity at Oakley Creek, we have planted specimens of tree fuchsia, *Fuchsia excorticata*. However, this species is gynodioecious - female flowers on one plant, male and female flowers on another - and so far, the plants have mostly been grown from cuttings from just a few individual trees. The availability of pollination vectors (such as wind, insects, bats or birds), and how far pollen may be transported, are other critical factors to consider.

Some further examples of dioecism in our Oakley Creek restoration species are:

Dioecious - kahikatea, rimu, totara, titoki, makomako, kohekohe, pigeonwood, pukatea, mangeao, kawakawa, *Carex* sedges.

Gynodioecious - tree fuchsia, hangehange, *Griselinia*, putaputaweta, toetoe. *Pittosporum* can be either.

With the information clues provided above, can you give definitions for the following botanical terms? - dioecious, gynodioecious, monoecious, parodioecious, gynomonocious, andromonoecious, hermaphrodite.

The answers, can be found at the end of the newsletter.

More information on this topic can be found in Webb, C.J., Lloyd, D.G. & Delph, L.F. (1999). Gender dimorphism in indigenous New Zealand seed plants. *NZ Journal of Botany*, 37, 119-130.

What is this?



Check your answers at the end of the newsletter.

Every morning I walk across the creek on the wooden bridge, looking always to see if there are eels unfurling like steel ribbon.

from *The Broken Book* by Fiona Farrell



Tree fuchsia (above) and toetoe (right) in flower.

Photos: W. John

Wildlife encounters



Banded kokopu, Wairaka Stream; spotty stonefly at Cradock St Bridge; bee with white pollen in our nursery - possibly pollen from the tree lucerne.

Photos: W. John



Welcome parataniwha

These special plants, which only grow in damp, shady areas, are parataniwha, *Elatostema rugosum*. Intended for the new La Rosa Stream daylighting project, they were surplus to requirements, so were gifted to Friends of Oakley Creek by Auckland Council Sustainable Catchments. They are now happily in place in a number of suitable locations along the creek, thanks to the efforts of Sinead Spedding and Margaret McConnell (pictured right) and Arthur Heighton. Our thanks to Auckland Council.

Photo: W. John



Weed watch

This section of the newsletter features details about weeds that threaten the native plants along Oakley Creek. You can help by tackling them at the stream and in your garden, if present. In this issue:

Delairea odorata, Asteraceae – german ivy

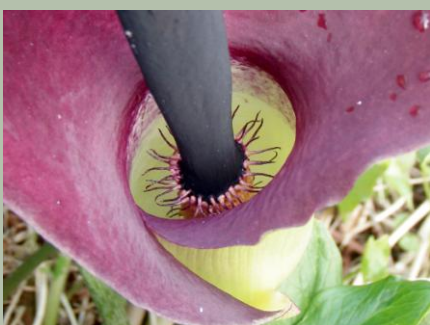


- perennial climber up to 5 m and dense ground cover plant
- with a misleading common name, german ivy is actually a South African daisy, related to ragwort
- smothers native seedlings, shrubs and small trees and prevents native seedling establishment
- fast growing
- semi shade tolerant, it grows in open areas, scrub and forest margins
- plain, bright green, multi-lobed, hairless leaves look like ivy
- slightly fleshy leaves and stems have distinctive smell when crushed
- has ear-like part (auricle) at the base of the petiole (leaf stem), unlike true ivy
- weak stems break easily
- yellow daisy flowers are produced in late autumn through to early spring
- many wind dispersed fluffy seeds produced
- established in New Zealand in the 1870s



Control: Identify individual plants when flowering, and so most noticeable, but before seed formation. Small plants can be dug out - note that stems break easily when pulled. Larger plants can be cut to 1 m in height and sprayed with herbicide, or stems can be cut at the base and stumps pasted with herbicide. Also note that german ivy roots and stem fragments can regrow, so compost carefully or send to landfill.

Photos: Seed heads, bottom right. M. Franco; remainder, A. Stanton



*This arum lily, *Arum palaestinum* (left) was recently seen flowering near the path, next to the Akarana Dog Training Club rooms in Phyllis Reserve.*

This fungi (right) has colonised an aging tree stump.

Photos: W. John





John Stevenson and Margaret Graham were among those who volunteered to help at the annual **bird monitoring** in June. One volunteer created a particularly cosy shelter from which to make their observations.

Rose Dowsett and Bea Ijkema, 'dug in' at the **June community planting** (right).



At the **August community planting**, it was full on mud and rain (far right) - only the hardest turned up for this one!



JULY PLANTING IN THE REMNANT MAHOE ROCK FOREST

Oh what fun! Spotted at a secret location up the creek.



Winter at Oakley Creek.

A BNZ team was back on the creek, again, for their 'closed for good' day, for the third year running. They did a great job clearing chinese privet and arum lily, and undertaking some infill planting.



Manukau Institute of Technology Level 4 students, with tutor Neil Clarkson, planted up a new area in Phyllis Reserve (far left), and undertook an infill / enhancement planting of an area some of the students had planted in 2013, as part of their Level 4 restoration unit.



Committee member, **Kim Maree**, and partner in crime (left), carrying out some under (cover) water filming for Kim's documentary on Oakley Creek.

Open Polytechnic students and tutor, **Jim Antil** (right), completed their restoration unit with a planting in Phyllis Reserve.



Collectively Kids children know that planting is serious stuff (below).



Collectively Kids, the winners of the Wai Care March Monitoring Month Community Award used their prize for a fresh water fish session on their favourite Oakley Creek, with fish expert, Paul Woodard from **Afishionado**. An exciting time was had by all.

The children were able to get up close to an eel (above), then Freddie helped return it to the stream (above right). *Photos: K. McIntosh*



Volunteers from **A Rocha and Haven** (left) planted up by Cradock St Steps. Funding for the site preparation and plants has come from the Auckland Council Parks Volunteer and Biodiversity Co-ordinator West, Huw Hill-Male. This is a new partnership, and it is great to see this area being restored, as an expansion of the great work A Rocha and Haven have been doing around the Cradock St Bridge.

Mt Roskill Intermediate's Matariki planting of an avenue of pohutukawa was kindly funded by the Puketapapa Local Board. A karakia was given before commencement of the planting (below). Project leader and science teacher, Sean Carroll helped do some digging (right).



Alexia Gedge (left), helped with the weta monitoring



Mt Albert St Judes Scouts (above and left) carried out some infill planting by the stream beside their den, during their weekend cooking camp in August.



Conservation Volunteers mucked in at the Oakley Creek nursery (left) and finished off the planting on the floodplain below Harbutt Reserve (right).



After the winter storms, removing the fallen pine at the waterfall was a challenging job (left).

6962 more native plants planted along Oakley Creek this season 😊



More storm damage along the walkway.

Guntaas Kaur also sampled the stream life as part of the regular **water monitoring**, with help from Wai Care's Kate McIntosh (left).



Spring is the time to be on the lookout for some treats to the visual and olfactory senses - kumerahou, hangehange, mingimangi, kowhai, karo and more. These kumerahou, *Pomaderris kumeraho* (far left) and karo, *Pittosporum crassifolium* flowers (left) are ready and waiting for their insect pollinators.

Photo: kumerahou, W. John; karo, A. Stanton

Listening in

Inspired by Richard Nunns' film, *Voices of the Land*, Kennedy Warne has recorded the many voices of Oakley Creek Te Auaunga - waterfall, rapids and riffles. Enjoy: <http://youtu.be/h2ro2FJloE4>



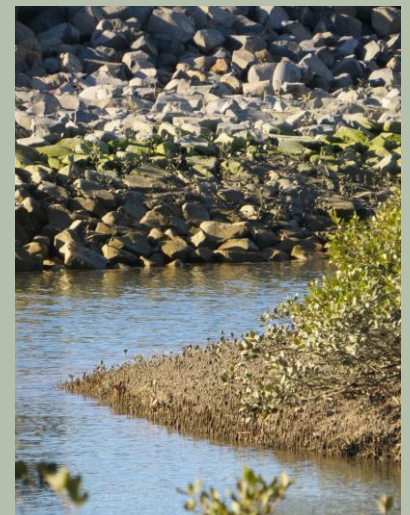
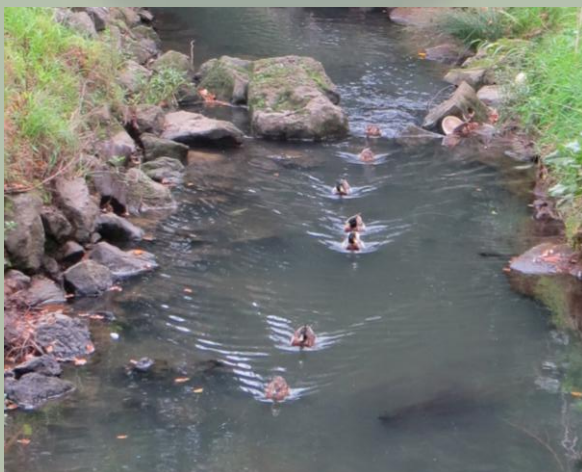
Sociable inkcap, *Coprinellus disseminatus* - not 'mush' room left!
Photos: W. John

Ferns, viewed through the waterfall (top left)

Ducks, running the riffle - 1,2,3,4,5,6,7 ... (left).

Where the stream meets the sea - low tide at Howlett Esplanade (right).

Photos: A. Stanton



Mixing and matching - solution

Note that, as with many other plant features, much variability exists - for example, a few hermaphrodite or female flowers may occur on some male individuals for some species. This can be described as low level inconstancy of sexual expression. Hermaphrodite flowers have both male and female parts in each flower.

Dioecious	male flowers on one plant, female flowers on another
Gynodioecious	female flowers on one plant, male and female flowers on another
Monoecious	separate male and female flowers on same plant
Parodioecious	both male and female plants also have significant numbers of flowers of other gender types
Gynomonoecious	separate female and hermaphrodite flowers on all plants
Andromonoecious	separate male and hermaphrodite flowers on all plants
Hermaphrodite	hermaphrodite flowers only

What is this? - solution



Far left: The head of a puriri moth, *Aenetus virescens*, trying to find its way, in its brief encounter with the big wide world. Note the little red spots just behind the top of the wings.

Left: A lichen covered stick. Did you know that some species of lichen are used as indicators in environmental monitoring, due to their sensitivity to pollutants?

Photos: W. John



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We gratefully acknowledge the support of ASB Community Trust, The Trusts Community Foundation and Auckland Council: Albert-Eden, Whau and Puketapapa Local Boards; Community Organisation Grants Scheme (COGS).

Next Newsletter Contributions and comments for the next newsletter are welcome - please send to info@oakleycreek.org.nz

New Members Welcome, Donations Too!

We welcome more members (\$10.00) and/or donations towards the work we are doing to protect and restore our wonderful urban 'taonga' - Oakley Creek Te Auaunga. Donations over \$5.00 are tax deductible.

Contributions and gift plant orders can be made directly into our bank account:

Friends of Oakley Creek - Kiwibank - A/c 38-9003-0978224-00

or cheques, made out to 'Friends of Oakley Creek', can be sent to: 4/65 Woodward Road, Mt Albert, Auckland 1025.



Friends of Oakley Creek
Te Auaunga

Chairperson: Wendy John Treasurer: Jane Shand Secretary: Kim Maree
Committee: Dominic Hutching, Helen Mellsop, John Stevenson
Newsletter Editor: Adrienne Stanton

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