



The Inlet

Newsletter for Guardians of Pāuatahanui Inlet

APRIL

2019

The Inlet is a newsletter that brings together local and regional news affecting the Pāuatahanui Inlet and its environs.

The Inlet comes out three times a year and current or back issues can be downloaded from our website.

The newsletter includes items of concern that affect the area as well as general interest topics for everyone.

Please contact us if you would like to contribute to The Inlet.

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FROM THE CHAIRPERSON

At last year's AGM I announced my plan to step down from the management committee in 2019 and at last that time has come. I joined GOPI in 2005 and became the chairperson in 2013. Now I need to pursue my long term plan of moving to my home town of Nelson to live.



Although I think of myself as coming from the tiny community of Rockville in Golden Bay, where I went to primary school, and then Nelson, where I lived during my college years, I have in fact spent much longer in Paremata than anywhere else. A large part of why I have been so happy here is being close to the Inlet. Appreciation of its natural beauty, the peacefulness that seems to come from living near a coastal environment, and the daily pleasure in seeing a comparatively unspoilt natural environment, brings, I am sure, a lot of pleasure to the those who live in the communities surrounding the Inlet. Many people I know and meet walking along the beach and pathways have said the same thing. As I have explained in these columns before, the benefits of living here come with a responsibility to recognise the Inlet ecology as under threat, and to do what we can to safeguard and restore its natural health.

While I would have liked to have seen more progress in the implementation of the Te Awarua-o-Porirua Harbour and Catchment Strategy and Action Plan, I recognise that the development of the strategy is, in itself, a significant achievement. I think that the GOPI committee has been successful in keeping its membership, and the local community, informed about all aspects of flora and fauna and the threats facing it. It has also consistently provided the local government authorities with informed, sound and positive advice through submissions and personal communication.

A personal bonus for me has been the friendship of all the members of the management committee during the last fourteen years, most of whom I would, otherwise, never have met. I have also met, and become friends with, those involved in many other allied organisations: Porirua Harbour Trust, PCC & GWRC, Forest and Bird Reserve Committee, Plimmerton Rotary, Kapiti Camera Club, Porirua Harbour Education Group, Ngāti Toa Rangitira and Keep Porirua Beautiful. I apologise if I have missed anybody.

I wish the Guardians the very best for the future.

Tony Shaw

JUNIOR PHOTO WORKSHOP

This year's junior photographic workshop was held as planned on 10 March. The turnout this time was 16 young photographers, mostly from local communities but with some from as far away as Waikanae and Masterton. Well done to you!

The day was mild but overcast, providing an opportunity to create some nice moody-sky effects.

Destina Munro, who teaches photojournalism at Massey University, has been taking these classes now for several years. In this workshop she talked to the group about the principles of colour and composition, how to photograph wildlife to the greatest effect and the importance of considering multiple points of view for each shot.

After the formal part of the workshop the participants spent an hour or so exploring the Pāuatahanui Wildlife Reserve and putting into practice what they had learnt.



A group of young photographers in the Wildlife Reserve. (photo: Tony Shaw)

GOPI is grateful, as always on these occasions, to the Forest and Bird Management Committee for allowing us to use Stout Cottage. It provides us with a base for the workshop and a teaching room from which the budding photographers could venture out to explore the natural and scenic beauty of the reserve.

Good luck to the participants of the workshop. On many occasions photographs taken at past workshops have become eventual winners in the Photographic Competition. 🌱

WILDLIFE RESERVE RECRUITMENT

The Pāuatahanui Wildlife Reserve management have asked GOPI if we could help to find keen conservation-minded people, with a variety of skills and some spare time, to join the Wildlife Reserve team once or twice a month for a few hours. As the current team dwindles over time, due to a variety of reasons but mostly associated with age and health, it is vital that new recruits are found to fill the gaps in both workforce and skills.

Working bees are run on a Mondays, just twice a month, with additional time put in on an ad hoc basis. It's voluntary work but very rewarding and there is a good social atmosphere. A morning break is offered with coffee and tea laid on. Some work continues after lunch if needed.

If you, or anyone you know, would like to be part of this vital work please contact Robin Chesterfield on tel: 022 651 4928 or email: chesterfield369@gmail.com. He would be very keen to talk with you. 🌱

PHOTOGRAPHIC COMPETITION UPDATE

This year's photographic competition is underway and the deadline for submitting your images is 30 April 2019. This is later than usual due in part to the timing of Easter and the subsequent holidays.

Also, due to current maintenance work on the Porirua City Council offices, the usual prize giving venue, the Helen Smith room, is unavailable and we have therefore moved this event to a new location:

Meeting Room 1, Te Rauparaha Arena, on Sunday 26 May at 12:30pm

We wish all the entrants the very best of luck with the competition. We look forward to seeing your photos and meeting you at the prize-giving ceremony when we release the results of our judge's selection. 🌸

2019 AGM

The AGM this year will be held on Wednesday, 19 June, at 7:30pm at the Anchor Church, Joseph Banks Drive, Whitby. We will have our usual formal meeting, including the annual report and financial position, followed by elections for the new committee of 2019-2020.

A major election item this time will be the selection of a new Chairperson because, sadly, after six years at the helm, Tony Shaw has confirmed he will not be re-running for this position in the coming year.

After the formal part of the evening we are hoping to have a guest speaker as usual but who this will be has yet to be confirmed.

STOP PRESS

This year we would like to throw out a divining rod to our membership and see what we can uncover.

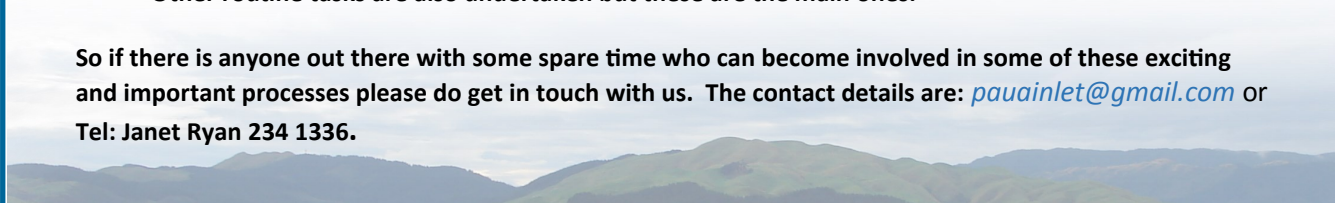
In the past we have offered one or two places on the committee for our members to join, and we are always hoping someone will say yes. This time, however, we want to take a different approach.

There are a number of background functions that need to be handled throughout the year. These functions are normally carried out by our committee with expertise built up over the years. However, we would like to see if one or more members, or perhaps their family or friends, would like to become involved with these various tasks outside of the committee. You would NOT need to be at our regular meetings for this, although you would be welcome of course. It only requires the assistant to keep in touch on progress and provide the necessary outcomes at appropriate times.

The tasks concerned would be:

- **The Photographic Competition. This takes about four months of the year and has a number of undertakings that one can become involved with.**
- **The Cackle Survey, which happens only once every three years, requires several assignments before and after the event;**
- **The annual Inlet Clean-Up that occurs on one day but needs a bit of preparation before hand.**
- **Other routine tasks are also undertaken but these are the main ones.**

So if there is anyone out there with some spare time who can become involved in some of these exciting and important processes please do get in touch with us. The contact details are: pauainlet@gmail.com or Tel: Janet Ryan 234 1336.



FEATURE ARTICLE

In the December 2018 issue of The Inlet we gave an overview of the Pāuatahanui Inlet catchment and highlighted the importance of this to the Inlet as a whole. This month's issue describes each of the six main streams, one by one, what controls their development, how they may contribute to the life of the Inlet and the environmental effects they have.

Streams of Pāuatahanui Inlet - Part 2

Kākaho

On the north side of Pāuatahanui Inlet is the highly significant Kākaho sub-catchment. With an area of 11.3 km² this is the third largest watershed for the Inlet. It is classed as a 'dissected steep-land' because of the terrain created by the stream and its tributaries. The Kākaho stream drains the hills from an elevation of around 440 m above mean sea level (AMSL) and drops down through farm land onto a small flood plain before crossing Grays Road to reach the Inlet. The 6 km course of this stream is dictated by the Ohariu Fault. This is a major tectonic feature that can be traced from the bottom of the North Island, through Porirua, into the hills north of the Inlet and on towards Paraparaumu. The fault is classed as active but hasn't moved for a long time. Its history, however, can be seen on the east side of the stream valley where many of the tributaries bend southward just before meeting the main stream. This is due to the northerly direction of movement of the east bank.

The highest reaches of the stream run through non-native pine forest, planted in the 1970s. However, much of the catchment is pastoral with exposed unconsolidated deposits that have lost the original native forest cover and are now used for grazing. As a consequence the erosion risk is extreme. This was demonstrated on 15 November 2016 when a significant storm event, preceded by the Kaikoura Earthquake, resulted in flood waters thundering down the valley, carrying with it tonnes of dislodged top soil and rocks, damaging fences and other structures along the way. Established riparian planting, along the streambank and adjoining gullies, protected those areas, showing the value of the right kind of vegetative cover. The removal of all the forest cover in the 1850s changed the stream bed for ever.



*Kākaho sub-catchment.
[source: John Mills (drone photographer), 2019].*

A view looking up-river clearly shows how the hills once descended to sea level, into a flooded valley caused by post ice-age inundation. Since the forest cover was removed huge quantities of sediment have washed downhill infilling the valley and creating the current flood plane.

Monitoring of the stream is carried out near its mouth for periphyton (algae, micro-organisms etc. on rock surfaces), macroinvertebrates and fish. Periphyton and macroinvertebrates show some effects of stream disturbance and pollution. The fish community, however, is typical of undisturbed or reference conditions for this type of stream with all expected reference condition species present including inanga,

Streams of Pāuatahanui Inlet cont...

long-fin and short-fin eel and redfin bully.

Horokiri

The second largest sub-catchment, with an area of 32.9 km², is the Horokiri, located on the north-east side of the Inlet. The Horokiri stream has its headwaters in the western edge of the Akatarawa Forest at an elevation of 530 m but, being 12.9 km long, is not as steep as the Kākaho. The catchment is still classed as a dissected 'steep land'. The upper reaches of the stream follow an old inactive northerly fault line, the Belmont-Horokiri fault, and flows from the summit down through Battle Hill. It then turns west to follow the Paekakariki Hill Road in a South-West direction, dictated by more recent tectonic activity, until it reaches the Inlet just east of Motukaraka point.

High up in the catchment, land use is mostly rough pasture with extensive areas of regenerating scrub and pockets of remnant indigenous forest at the very top. The steep bedrock slopes are forested on the eastern flank while western slopes and valley floor are covered by rough pasture. Midway down the catchment, one of two local regional parks, run by Greater Wellington Regional Council (GWRC), is found - the Battle Hill Farm Forest Park. Battle Hill Bush, located in the park, is the only Key Native Ecosystem site in the Pāuatahanui Inlet catchment.

Along its lower reaches the catchment is largely pastoral, with low intensity farming and nurseries. Some riparian planting has occurred along the stream banks. Just before reaching the shore, and just north of Grays Road, a small tributary joins the main stream after running through a 5 ha wetland that is designated the Horokiri Wildlife Management Reserve. Originally a cattle paddock, this is now being restored as a wetland habitat by a local group of enthusiasts.

As with the Kākaho, the denuded landscape is very prone to erosion, with heavy storm conditions causing a lot of sediment to be moved downstream, adding considerably to the silting of the Inlet. According to surveys from the 1850s, prior to deforestation, the Horokiri stream had a long narrow tidal creek. This was infilled once the forest cover had been removed and a delta formed at the outlet to the Inlet. While the Horokiri Stream generally has good water quality, evidence shows it can be affected by bank erosion and sediment run-off from nearby forestry activities.

GWRC monitor the environmental health at Snodgrass, opposite the entrance to the Golf Club. Periphyton and macroinvertebrates show similar characteristics to the Kākaho, although there are often high nutrient levels. The stream is known to contain various native fish species including the long and shortfin eel, two species of bully, inanga and banded kōkopu. Also found in the Horokiri, as well as a couple of the other larger streams, are European brown trout. These were introduced as fry in 1883/4 and thrived.

The Horokiri stream will be significantly affected by the construction of the Transmission Gully Motorway because, for 6 km, the road will be aligned with its upper reaches. For this reason protection work has been undertaken on the fish, reptile and plant life to preserve the natural habitats of aquatic and riparian environments.

Ration Creek

Moving clockwise around the Inlet shores we next encounter the Ration Stream sub-catchment which is one of the smaller areas at only 6.1 km². From an elevation of just 260 m AMSL, the 4.8 km stream rises in the eastern slopes of the Akatarawa Forest and descends erratically to a flood plain separated from the Horokiri plain by the Ration Point rocky outcrop. The lower reaches cross marshland that is part of the Pāuatahanui Wildlife Reserve before meeting Grays Road and flowing into the Inlet. It is largely riparian planted.

Ration Stream has had only a small amount of human influence compared to the other five catchments but,



Streams of Pāuatahanui Inlet cont....

while the upper reaches are forested, this is largely plantation trees and some of these have been felled in recent times. What testing and monitoring has been carried indicates there are similar effects to its habitats as those of the Kākaho and Horokiri streams.

Pāuatahanui

The Pāuatahanui sub-catchment is the largest basin with an overall area of 43.4 km². The stream starts life in the Haywards Hill, beginning at 430 m AMSL, and flows westwards along an old Haywards Fault line, then through the Judgeford valley, reaching the Inlet at its eastern shores. Along the 9.6 km length it picks up water from tributaries in the Haywards, Judgeford and Belmont areas. Pāuatahanui Stream was once a very significant river system, originally draining the Eastern Hutt hills, before movement along the Wellington Fault diverted the river channel into the Hutt Valley. During the Ice Age the original river continued well west of the current coastline to reach beyond Mana Island but inundation through rising sea levels 5000 years ago flooded the river valley up to Bradeys Road creating the Inlet we know today. The felling of native forest from 1850 onwards resulted in increased infilling, creating the Lanes Flat flood plain and an estuarine wetland.

Land use in the catchment is largely low-intensity farming with some peri-urban development in the lower reaches. Belmont Regional Park, managed by GWRC, is located at the headwaters of the Pāuatahanui Stream. Before reaching the Inlet the stream passes through a large saltmarsh which forms part of the Pāuatahanui Wildlife Reserve. This saltmarsh is the largest, relatively unmodified, estuarine wetland in the southern North Island. Its importance for the Inlet is paramount as this type of habitat is highly productive, creating huge quantities of biomass on which the majority of aquatic filter feeders, like the cockle, depend for their existence. Its preservation is therefore essential for the health of the Inlet as a whole.

GWRC monitors the stream at Elmwood Bridge, located on its lower reaches and accessed through private land. Water quality is consistently rated only as 'fair'. The main pressures affecting water quality in the Pāuatahanui Stream are rural and urban run-off from the surrounding land and the busy highway. Also the stream itself is small compared to the catchment and more readily affected by storm events. In recent times Lanes Flat has been completely submerged on more than one occasion. The new development at Silverwood is increasing run-off under heavy rains which is diverted into areas of the reserve where there is no natural drainage. One often forgotten advantage of this large wetland area is its natural filtering effect, which helps to reduce the amount of pollutants reaching the waters of the Inlet itself.

The stream provides a habitat for a range of indigenous and threatened fish species, including the giant kōkopu, longfin eel, inanga and redfin bully. Species of lamprey, which are considered to be nationally vulnerable, have also been observed in this sub-catchment. Inanga used to be common but are much rarer now, and it is thought that reduced flow rates at the estuary are discouraging the young 'whitebait' from entering the stream to breed.

Duck Creek

Duck Creek stream starts life in the Belmont hills at an elevation of 390 m and, on its winding 7.2 km length, flows past Cannons Creek and Waitangirua, down through Whitby and the old golf course, to reach the Inlet at the Duck Creek Reserve wetland on State Highway 58. The area of the catchment is only 10.5 km² and the upper reaches of the stream follow a valley that is aligned to the Moonshine Fault. Duck Creek is joined near Samuel Marsden College by the outflow stream from Whitby Lakes and their small catchment, together with another stream that drains the hillside above Spinnaker Drive and flows down beside the walkway that connects Spinnaker Drive to Solander Place and Discovery Drive.

Whilst the other catchments above will remain rural in land use for many years to come, with perhaps a



Streams of Pāuatahanui Inlet cont....

few additional lifestyle developments, Duck Creek has already suffered from significant urban development and is still being altered as deforestation and urban development continue unabated.

Land use for most of the upper reaches is generally pastoral, with areas of scrub and native restoration south of the Whitby urban community. From there onward however it is urban or semi-urban, with increases in population in recent years taking even more land for housing. Along with this has been the clearance of pine forest, originally planted in the 1970s, making room for the developments. The lower reaches have recently been subjected to land clearance and re-contouring as part of the Brookside Estate. The riparian strip is now the subject of a management plan to try and restore the natural environment for invertebrate and fish life that still exists in the stream.

Browns Bay

With the smallest sub-catchment of all, at only 1.2 km², Browns Bay is also the most altered of the six drainage systems that feed the Inlet. Browns stream flows from the western boundary of Whitby, with its headwaters in the hills below Ascot Park at around 157 m AMSL. From here it travels for just 1200 m to the Inlet but most of the stream's original course has been obscured by major landscaping and the installation of stormwater systems for the housing developments around Staithe Drive and Postgate School. A second branch begins life just below Kahu Road and courses its way past Carvel Lane, through bush to Postgate Drive. From there it runs under the road to meet the main stream before emerging again at Browns Bay Park.



Browns Bay sub-catchment.

[Source: John Mills (drone photographer), 2019]

Land cover is almost all urban. When the suburb of Whitby was started in the seventies this catchment underwent a complete transformation with most of its land converted to urban use. Consequently, while some attempt was made to mitigate the sedimentation by the use of silt traps during landscaping, over time significant levels of sediment have been deposited in the Inlet from this development. Only a small amount of vegetative cover remains, largely in the stream gullies and hills above the housing. ☸

ON THE HORIZON

The Cockle Survey is run every three years, and in 2019 the next one will take place. To give everyone advanced notice of this event we are, here, publishing the planned dates for this year's survey.

Primary Survey Date: Sunday 24 November

Postponement Date: Sunday 8 December

As usual we depend on volunteers to help with the process of counting these important shellfish all around the shores of the Inlet. If you would like to be part of this event please diary these dates.

Closer to the time we will be advertising the up and coming survey and at that stage you will be able to register your interest in helping. ☸

FAMILY CORNER

WORD-FIND

In this issue there is a large Feature Article on the streams that feed into Pāuatahanui Inlet. Below, you will see a Word-find grid in which is buried the names of the six streams mentioned in the feature.

Your challenge is to find where these words are in the grid. Remember that the names can be diagonal, backwards or upwards so not all will be written in the regular direction.

I	A	E	J	O	T	Y	D	I	N	S
D	U	C	K	C	R	E	E	K	S	X
C	H	N	M	R	W	B	G	L	N	Q
E	I	Z	A	U	P	K	F	A	W	V
J	R	O	T	H	Y	K	P	U	O	Z
D	I	H	L	P	A	T	X	B	R	F
J	K	M	Q	K	U	T	Y	C	B	G
K	O	O	A	S	W	A	A	E	I	M
Q	R	H	U	Y	C	G	K	U	P	T
N	O	I	T	A	R	Y	C	H	A	L
P	H	T	Y	C	H	L	O	T	X	P

The answer is to be found on page 9

RECOGNITION FOR JOHN WELLS

A few years ago members of our committee at that time suggested that it would be appropriate to nominate Professor John Wells, our previous chairperson, for a royal honour to recognise the immense contribution he had made to marine ecology, particularly to the ecology of the Inlet and the Porirua Harbour as a whole. The application was not successful at the time but such nominations can be resubmitted which the committee did in 2018 when John became seriously ill.

To our surprise a few weeks ago we learnt that John had been proposed for appointment as a Member of the New Zealand Order of Merit in the 2019 Queen’s Birthday list.

Unfortunately, if the nominee dies before they have the opportunity to accept the honour, the proposed award cannot proceed. Naturally we are pleased that John’s work is so highly regarded and hope that this is of some comfort to his family. 🌿

ANSWER TO FAMILY CORNER

I	A	E	J	O	T	Y	D	I	N	S
D	U	C	K	C	R	E	E	K	S	X
C	H	N	M	R	W	B	G	L	N	Q
E	I	Z	A	U	P	K	F	A	W	V
J	R	O	T	H	Y	K	P	U	O	Z
D	I	H	L	P	A	T	X	B	R	F
J	K	M	Q	K	U	T	Y	C	B	G
K	O	O	A	S	W	A	A	E	I	M
Q	R	H	U	Y	C	G	K	U	P	T
N	O	I	T	A	R	Y	C	H	A	L
P	H	T	Y	C	H	L	O	T	X	P

PLEASE SIGN UP A FRIEND OR NEIGHBOUR

Sign up a neighbour, friend, or another family member. Just explain to them that membership numbers really count in giving us a strong voice to argue for what we all value about the Inlet. Membership forms can be downloaded from our website <http://www.gopi.org.nz/assets/membersForm/Membership-new.doc> or copied from the one at the back of this newsletter. Better still, if you’ve received this newsletter by email, just forward it to others with a note encouraging them to join.

EMERGENCY NUMBERS FOR THE PĀUATAHANUI INLET

Pollution: Discharges of contaminants to air, land, storm-water drains, streams, rivers or sea and for after hours consent enquiries: Greater Wellington 0800 496 734 (24 hours)

Boating infringements: Greater Wellington 384 5708 (24 hours)

Illegal fishing activity: Ministry for Primary Industries 0800 476 224 (24 hours)

Pāuatahanui Wildlife Reserve: Department of Conservation 0800 362 468

Let us know what you have reported so we can keep an accurate record and follow up if necessary.
233 9391 (Chairman, GOPI) or pauainlet@gmail.com.



Guardians of Pāuatahanui Inlet

www.gopi.org.nz
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Membership Form: new members

To join the Guardians of Pāuatahanui Inlet, you can pay your subscription either online or by post. **IF YOU ARE PAYING ONLINE, PLEASE REMEMBER TO FILL IN THIS FORM WITH ALL DETAILS, AND EMAIL OR POST IT TO US.**

Online payment

1. Pay your sub via e-banking into our Westpac account 03-1533-0009387-00. In the 'Particulars' or 'Reference' columns, **YOU MUST** write your surname **AND** initials **AND** the period of your sub (1-yr or 5-yr).
2. Then fill in this form and either email it to us at pauainlet@gmail.com or post it (see next column for our postal address)

Postal payment

1. Write a cheque made payable to 'Guardians of Pāuatahanui Inlet'.
2. Then fill in this form and send it, along with your cheque, to: Membership Secretary, Guardians of Pāuatahanui Inlet, Box 57034, Mana, Porirua 5247.

Please fill in your details for our records. If you are filling in this form electronically, **click** at the

Name:

Address:

E-mail: Phone:

Please put next to the subscription you are paying (electronic completion – **highlight** the box and type lower case x.) We are also very grateful for donations. (We are a registered charity for tax purposes: registration number CC47523.)

One-year individual (\$12.00)	<input type="checkbox"/>	Five-year individual (\$50.00)	<input type="checkbox"/>
One-year family (\$15.00)	<input type="checkbox"/>	Five-year family (\$60.00)	<input type="checkbox"/>
Donation: \$		Do you require a receipt for your sub? <input type="checkbox"/>	or your donation? <input type="checkbox"/>
Date subs paid:		Reference appears as:	

(e-banking only)

We'd like to send you newsletters and notices via email. May we do this?

Please tell us which of our activities you would like to be part of.

Annual Clean-up day	<input type="checkbox"/>	Submissions to local bodies	<input type="checkbox"/>
Three-yearly cockle survey	<input type="checkbox"/>	Our educational programmes for schools	<input type="checkbox"/>
Website and video clips	<input type="checkbox"/>	Other:	

NOW EMAIL OR POST THE FORM. THANK YOU AND WELCOME