

A Road Runs Through Wetlands in Pohangina Village

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Pohangina Wetlands, once part of a swampy farm property near the village proper of Pohangina (Manawatu district), has recently been granted a Queen Elizabeth II National Trust covenant. This is the story of the development of the wetlands.

THE BEGINNING

California-born Gordon and Taranaki-born Anne came to Pohangina Valley in 1995 after some years in Palmerston North where Gordon lectured and researched microbiology at Massey University and Anne established the best veggie and landscape gardens in town - to be of valuable experience later. In Pohangina, they bought a lifestyle block across the road from 'Luttrells White Pine Gardens and Museum'.



Next door to the Pilone property, sheep and bulls were grazing on a very wet paddock with some remnant kahikatea (NZ white pine) and other wet land flora struggling to survive (see image 1). This very wet farmland, owned by Finnis Farming Company Ltd (John and Mary Culling), historically continuously challenged owners attempting to drain it for pasture development. Just across the road, was the well established Luttrell's white pine bush, non-grazed with walking tracks to admire the habitat and birdlife; only one small pond was there to attract wetland wildlife. Wouldn't it be nice, thought Gordon and Anne, to extend that bush habitat and also to create ponds on

this property for wetland wildlife too. Thus, a long term retirement project began and now, some years later, Pohangina Wetlands has grown in size and maturity of habitat with the development of more swampy land purchases, land mostly hidden from view from Pohangina Road.

For management purposes, The Gordon and Anne Pilone Charitable Trust was established

(August 2000) and additional Trustees were sought to advise on the development plan. Initially, these were local farmer and orthotist Chris Pullar and accountant Ian Mackrell. Later, local naturalist Dr Liz Grant came on board as a Trustee for her expertise in visual design and entomology science.



THE WORKINGS

Pohangina Wetlands development became real in 2001 when The Trust contracted local Kevin Large with his digger and bully to create the first pond near the main entry gate along Pohangina Road across from the Luttrell's kahikatea bush (see image 2). This is now known as the

Kahikatea block. Kevin had an open contract in that he would come and go as time permitted and as soil moisture allowed earth works. The design for the wetlands was mainly haphazard, but land features dictated where tracks and some ponds be logically created. An aerial photograph of the topography of the property also aided the workings, while much discussion with Trustees, particularly Chris Pullar, and others, Tim Luttrell, and Kevin Rooke (Horizons), occurred on a continuing basis. For Gordon, the beginning months of digger work were enlightening and a steep learning curve of what a digger can accomplish when a competent operator such as Kevin was at the helm; so it took some time for Gordon to be able to make the calls and contribute to the wetlands physical development.

Progress was slow as the wet dirt moved to create a pond was used to develop the head and the track along the bund. Thus, considerable time was needed for the soil to dry to get access. The enormous 2004 flood was devastating to much of Pohangina Valley. Roads and bridges were washed away and it was difficult for many to travel to work or for shopping. Many locals will remember Pohangina Road in the village being cut-off when the culvert bridge at Sandy Creek was washed out. The Pohangina Wetlands became even more soggy, but surprisingly to some no water damage occurred. This is because the “wet” of the wetlands comes from aquifers (underground water supply) and not directly from water flowing on the surface via creeks or streams or rivers. We think this is important to the ecology of Pohangina Wetlands as lack of extreme water flow levels (flooding) maintains stability of the habitat.

Wetland development slowed down following the flood, since Kevin was involved with clean-up work in the valley. But, activity still continued in that native grasses, bushes, and trees were being grown and planted mostly on a daily basis by Anne. An extensive shade house was built in a corner of the wetland property where you could find Anne during most of her spare time tenderly caring for the extensive array of plants being matured and transplanted into various size pots (see image 3).



The next image shows Anne in the early days planting out the island in the first pond by the entry gate along Pohangina Road (see image 4). Nearly all of the plants were sourced locally either by collecting seeds or transplanting very small plants already growing in the property. Anne's green thumb experience from her years of gardening in Palmerston North came to good use in Pohangina and she is still doing a lot of maintenance planting, though at a slower pace.



In 2006, work began on the second block (damsite block) of land that extended below the home block (not part of the “official” Pohangina Wetlands). This block contained a large spring that provided plenty of clear water which was drained away to Weka Street drain. The biggest pond (0.54 ha) was built in this block and included a good sized island and a subterranean island that sometimes can be partly seen during the drier seasons when the ponds are at their lowest level. Then, ducks and other water loving birds can wade and forage and feel protected being surrounded by water. Work on the “big pond” was challenging and required the hire of a large track-dump truck to take away soil and extra hired help to operate it and the bully with Kevin still on the digger. This was also a very large block (2.3 ha) to plant out so Anne was flat out growing and planting and weeding. This block is now maturing nicely and having a “lookout” makes for a very peaceful setting for visitors to stop and rest and hopefully be entertained by some resident or visiting wetland wildlife.

We almost stopped additional development of (wet) land when the damsite block was more or less complete in its creation. However, Gordon was able to convince Anne and the other Trustees that some additional property would be fruitful for the future protection of the slowly maturing two main blocks.

The kahikatea block along Pohangina Road adjacent to the home block formed an “L”-shaped property when the damsite block was developed below the home block. This triangular block that was formed was being grazed and other potential uses could be envisioned, detrimental to the developing wetlands. The land was very wet and ideal for wetland development, increasing the total habitat of Pohangina Wetlands. So, in 2010, this land was purchased and designated the Culling block in appreciation of obtaining more (wet) land from Finnis Farming Company Ltd. and that its southern boundary is neighbouring John and Mary Culling's farm land. Instead of extensive pond development and native plantings, the land, essentially, is being allowed to “develop on its own”. Some earth was moved by Tim Luttrell with his smaller digger to provide a flow of surface water through some of the block. Also a few flax, cabbage trees, and *carex geminata* (cutty grass, rautahi) have been planted amongst the existing rushes to provide some diversity for wildlife attraction. It is hoped that in time, many more native plant species will become established and this is already taking place with the natural emergence of four manuka.

It is obvious from Pohangina Road that the wetlands slope quite dramatically towards the Pohangina River. The aquifer and surface water flows from north to south. This enabled the creation of ponds with varying depths from minimal at the upside of a pond to quite deep at the back (head). During the drier months, you will notice formation of muddy areas at the upside of the ponds. This habitat is invaluable as it attracts wading birds that feed on insects and such in the “mud flats” of the ponds. So watch out for pied stilts, heron, NZ royal spoonbill, spur-winged plover, and dotterel, for example.

Because of the slope of the land towards the river, all the surface water that overflows the ponds during the wet months flows to the southern most part of the wetlands, the base of the damsite block. Until 2012, this water drained directly to Weka Street drain and to the river. But, Gordon found a way that this water flow could be used again to establish a different habitat within the wetlands. The Trust is very grateful that once again Finnis Farming Company Ltd. allowed the acquisition of a small (0.2 ha) parcel at the back of the damsite block. Here, Tim Luttrell created a series of shallow ponds with final exit of water overflow to the Weka Street drain. Retention of water in this block is being aided by the planting of raupo (bullrush, cat tail) to overtake the open space of the water in the shallow ponds. This will create a habitat that is new in the Pohangina Wetlands. It is hoped that the raupo block will allow shy and uncommon wetland birds to be seen such as fernbird, crakes, and bittern. This may be wishful thinking as the area is small. But, raupo swamps, too, are ideal as filters for water purification and this habitat in the Pohangina Wetlands will be another example for future visitors of the beneficial use of wetlands preservation and creation.

OOPS!

Even with the best of planning, establishing a wetland is not necessarily trouble free. Things can go wrong and sometimes reworking is necessary, but costly. In 2006 after the big pond was created in the damsite block, we noticed that the pond would not maintain its full overflow level for

long after a wet period, but dropped rather quickly, exposing the subterranean island and pond bottom (see image 5).



For some time, a wet patch behind the head of the pond was apparent when walking the track behind the head next to the drain, so an exploratory ditch was dug along the pond below the base of the head (see image 6).

A cluster of rocks were exposed (see image 7) and seemed to form a drain into the head, since water was trickling from the rocks. It is likely that in the past, this was a very wet paddock being drained at this point and made from a ditch filled with rocks.



These rocks were unseen underneath where the head of the present pond was developed. All agreed, the remedy was to cut through the head of the big pond and remove these rocks and then rebuild the head (see image 8).

If you live in the lower North Island you may remember the Eketehuna earthquake that was strongly felt in the Pohangina Valley in January 2014. During a Trustee tour of the wetlands, it was very noticeable that the poplar pond in the Kahikatea block was extremely low compared with other ponds. This pond is where the 'water



image 8



image 9

works' pipe crossing the pond head with an upright was built to allow discharge of the pond water to different levels (see image 9). We thought it would be clever to be able to control the level of water in this pond and to form new habitats (e.g. exposed muddy areas) at will. Well, Mother Nature, thought differently. The reason for the unusually low pond water level became apparent when Anne found water leaking from the outlet side of the pond hidden in tall grass near the end of the pipe running through the head of the pond. On further inspection, there was a large crack in the plastic T-fitting at the base. This must have happened during the earthquake. The T-fitting was held snugly by two posts on either side, so apparently there was not enough "give" to the movement of the pipe caused by the earthquake. The assembly was removed and the pipe carrying water through the head was capped off on the inlet side of the pond. It is noteworthy that careful thought needs to be given to the design of piping in a wetlands system.

Another example of this was during the development of the ponds in the kahikatea block. The major ponds there are connected by 110 mm pipes allowing water to flow from one pond to the next underground rather than over the tracks meandering through this block. This made for easier and drier access for visitors. Gordon had the bright idea that to prevent clogging of the inlet of the pipes with surface debris, the inlets could be fitted with a short pipe at a 45-degree angle to submerge the inflow beneath the surface of the pond, thus preventing surface debris entering the pipe. Soon



image 10

after this modification, Gordon was surprised to find all the ponds in the kahikatea block had lower water levels than the expected overflow levels when the ponds were full. The penny dropped and it became obvious that the attachment of the inlet angled pipe to submerge the inflow also allowed for siphoning to occur when the flow was great enough to fill the pipe and continue to flow to the level of the submerged inlet. A lesson learned. And the solution was obvious, too; drill a hole at the attachment point of the angled pipe to allow the inflow of air, thus preventing siphoning (see image 10).



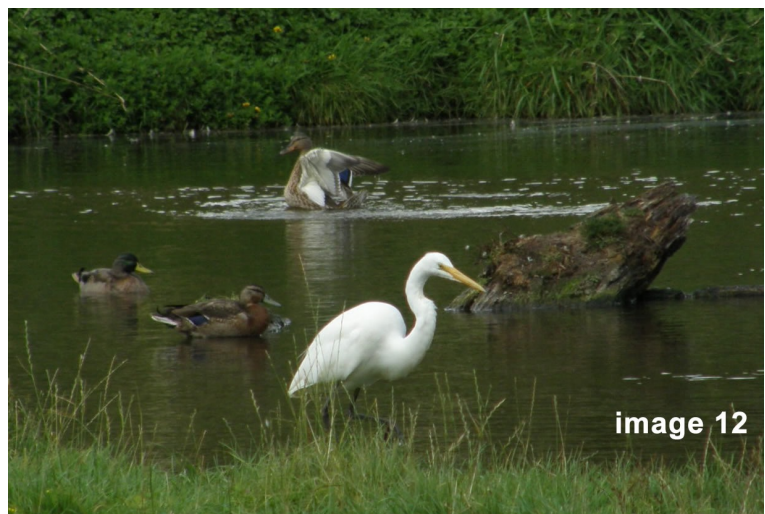
Some 'oops' happen unexpectedly and cause major changes. In 2011 Gordon began to have cramps in the calves of both legs when walking only short distances. Medical intervention was not possible as peripheral arterial clogging was advanced. Consequently, late last year, Gordon had to have both legs amputated above the knees to prevent advancement of gangrene. Being wheelchair bound now prevents Gordon from being physically active in the wetlands development. Fortunately, the major expansion of the wetlands are finished and Anne can continue the maintenance plantings. Track mowing is subcontracted to Tim Luttrell.

Unfortunately, Gordon's home could not be readily renovated for wheelchair living, but fortuitously a cottage being built across the road by Tim and Carol Luttrell became

available and was purposefully built for wheelchair use. Although Gordon's lifestyle has changed dramatically, he maintains high spirit and determined and has adapted to his disability with the good help of Tim and Carol as caregivers. You will still see Gordon in the Pohangina Wetlands, but not on his tractor mowing or on his bright orange Kubota RTV having a look around. Instead, Gordon will be observing and taking pictures from a Tlmmobile (see image 11), a mobility scooter renovated by Tim for people like Gordon. So, look out for Gordon on the tracks of the Pohangina Wetlands and have a chat, or come to the cottage across the road and say Hi.

THE RESULTS

The wetlands were opened to visitors on the longest day in December 2005. This is early in the developmental stages of the wetlands, but allowed the inquisitive to have a look at what we were doing. Some visitors have been coming back for years. [The wetlands are always open to visitors at no charge and a brochure is available at the entry gate on Pohangina Road.] Gordon and Anne can remember the absolutely shocking sight along Pohangina Road when Kevin first created the roadside ponds. The area looked like a war zone and most what could be seen was black mud. Surprisingly, it didn't take too long for Mother Nature to repair and Anne's patient efforts of planting wetland grasses,



bushes and trees, before the kahikatea bush began to look like a real wetland. Slowly, too, came the birds and the population of resident mallard and pukeko flourished.

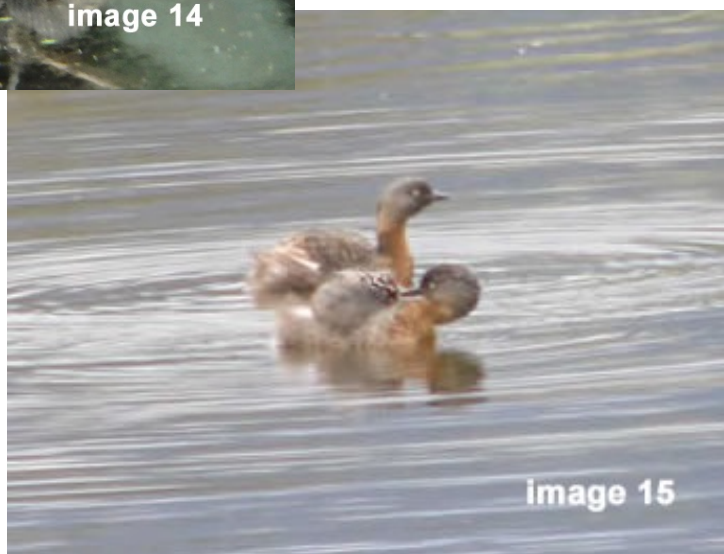
Probably one of the greatest joys of our efforts in establishing a wetlands was seeing a real live kotuku (white heron) visiting for a few hours on Sunday March 9, 2008 (see image 12). This rarely seen magnificent bird breeds only at Okarito, Westland. This has been a one time event, though it may be that visits take place but you are not in the wetlands.

Another uncommon visitor is the New Zealand Royal Spoonbill (kotuku-ngutupapa). A single young individual was seen for several days feeding in the shallower ponds sweeping its long black beak catching submerged insects and the like. These birds are commonly seen in estuaries and some flock yearly at nearby Foxton beach estuary. Since the first bird seen in March 2007, we have had increasing numbers visit, sometimes in flocks as high as 13 (this year) that may stay for several days. The adult displays a beautiful head plumage and front yellow feathers and has a large long black beak that ends in a spoon shape (see image 13). It is probable that Pohangina Wetlands habitat is developing favourably for this magnificent bird; and what a thrill it would be to see a hatching.

You should be aware that the spoonbill is not the same as the shoveler (kuruwhengi). The name spoonbill is often used by some hunters for shovelers as its bill is somewhat shovelled (spoon) shaped (see image 14). Shovelers are legal game during duck season, but spoonbills are protected. Shovelers are now commonly seen, too, on the wetlands and are now established and breeding.



Another resident wetland bird that delights the visitors is the dabchick (wewei, a grebe), a dumpy looking bird that swims in a jerking motion. Dabchicks love to skitter across the water chasing their mates and they dive to fend for grass for feed. During the breeding season, you can find one or two white striped headed chicks on the back of an adult with the mate diving and bringing food to the chicks. Dabchicks are territorial birds, so you do not see flocks of these, but seemingly the same pair occupy the wetlands big pond each year (see image 15)



Besides the birdlife, your visit should include looking for insects, eels, native fish, and an array of plantlife typical of the lowland podocarp (kahikatea) forest that once captivated the Manawatu. Visit often, for you will be rewarded, as much of what you see is seasonal and not necessarily present on the finest hot day of summer. Much more information can be found at the Pohangina Wetlands' website pohangina.org.

THE FUTURE OF POHANGINA WETLANDS

The Pohangina Wetlands is unlikely to expand further in size, as the wettest land along the north/south aquifer that flows under the land in the triangle of Pohangina Road and Weka Street drain now has been purchased. This is a sizeable area of 6.4 hectares (15.8 acres) that has been taken out of doubtful pasture use for the development of a wetlands of ponds and native grasses, rushes, bushes and trees. If you consider the private home block as part of the wetlands, the total area increases 1 hectare (2.471 acres). The home block has a modest pond and extensive shelter belts that contribute to the habitat. The future of this block is uncertain, but hopefully this eventually will be under the control of the Trust. The home could be rented for income for maintenance of the wetlands or perhaps used as a home for a guardian of the wetlands. Alternatively, the home may be established for short term stays so ecologically-minded families or groups might make this their base camp for visiting the valley. One day, the home will be no more; then the block can merge completely into a wetland habitat.

There is no mandate in the deed of trust for the Pohangina Wetlands that development be restricted to the current site. Future wetlands or contributions to wetlands and natural bush development can be considered as long as it is within the watershed of the Pohangina River. It would be interesting to explore the use of the Gordon and Anne Pilone Charitable Trust (perhaps generalised to 'Eco Pohangina Valley Trust') as a focus for management of further ecological developments in the Pohangina Valley with support from outside sources.

LUTTRELLS WETLANDS AND KAHIKATEA BUSH

The focus of this essay has been on the developing wetlands along Pohangina Road within the village proper and how it came to be. Many of you, though, not familiar with Pohangina Valley, may not realise that next door to Pohangina Wetlands and hidden by the magnificent tall stand of kahikatea (NZ white pine) is another developing wetlands. This wetlands is on the property of Tim and Carol Luttrell and has become a part of their enterprise, 'Luttrells White Pine Gardens and Museum'.

Luttrells are open anytime by arrangement for a small entry fee. The complex is well worth seeing and includes a walkway through kahikatea bush; tracks meandering around wetlands with varying sized ponds and wetlands vegetation and plenty of opportunity to view typical wetland wildlife; and viewing a comprehensive museum comprised of themes of activities, lifestyles, and tools some that depict the work that settlers within this valley have used to survive the harsher times of earlier life.

Noticeably, the two wetlands with a road running through the habitat (see image 16), are complementary. An obvious interaction is the coming and going of birds between the two properties. For example, Gordon and Anne have over several seasons seen kereru (NZ wood pigeon) fly into kahikatea and totara in their home block to build nests. Birds are also seen flying into each property for feed and then rest or overnight in the other. At the moment, there is a flock of canada geese that can be seen sometime in one or the other wetlands, or split between the two. Surely, too, their must be interaction of other wildlife such as eels, insects, and even the transfer of seeds.

Most would agree that the Pohangina Village residents are fortunate to have such an extensive wildlife habitat of 10 hectares (25 acres), combined, within walking distance of their homes. To assure this is kept in perpetuity for future residents of this beautiful valley, the Pilonas and Luttrells have recently applied for and been granted Queen Elizabeth II National Trust covenants on the portion of their properties that constitute wetlands and bush. We are grateful and honoured that QEII National Trust has regarded the properties as worthy of protection. [See openspace.org.nz for information for private landowners in New Zealand to permanently protect special natural and cultural features on their land with open space covenants.]



Now that the future of the two wetlands of Pohangina Village are secure for generations to come, it is interesting to speculate what form of management might develop for their continued maintenance to an appropriate standard for visitors. The Pohangina Wetlands, currently under the auspices of the Gordon and Anne Charitable Trust, already has some long term management permanency in the “turnover” of Trustees over time, as well as some financial assurance as the beneficiary of the Pilone estate. The Luttrell wetlands and kahikatea bush belong to the family, but the long term future for management of this covenanted property is unclear. As the two wetlands and bush properties are adjacent, separated only by a road, and that wildlife interaction is seamless; it therefore seems logical that the two properties be managed as one. This does not mean the two properties need to be amalgamated in ownership, but in management only for efficiency and continuity. In the Manawatu, today, there already are parks and open space properties being managed by some level of government using subcontracted maintenance. In the future, this might be considered for the management of the “Pohangina Village Wetlands”.

We look forward to seeing you in the ‘wetlands a road runs through’.

THANKS

For over 16 years Trustees to the wetlands have given advice to the development of the Pohangina Wetlands. Thanks to Chris Pullar, Ian Mackrell, founding Trustees along with Gordon and Anne, following later by Liz Grant. All have stayed on board through many meetings and field trips visiting the wetlands and the work in progress. Each Trustee is a member of Ducks Unlimited New Zealand and occasionally we link with them and their vast experience in developing wetlands with conferences, visits to private wetlands, and in receiving the Duck’s Unlimited Ltd. magazine, ‘Flight’.

The man with the Big Digger and Bully, Kevin Large, is probably the one person that can be said to have had the major role in shaping the outcome of the wetlands. Thanks Kevin for a job well done without getting stuck in the mud.

Neighbour Tim Luttrell has been helpful in countless ways. For the first part of the project, he and Gordon had numerous mini meetings over coffee and Tim’s wisdom of nature and his eye for detail is gratefully appreciated. During the final stages of the wetlands development after Tim acquired a digger to pursue the makings of his own wetlands across the road, he delicately carved out two of the wetlands blocks, the Culling block and the Raupo block. These are different in design to the other blocks and it will be interesting to see how attractive these will be for wildlife.

Kevin Rooke has been interested in our project from the beginning, both personally and as an expert in soil management as a member of Horizons. Thanks Kevin for your advice and encouraging help to receive a generous grant from Horizons under its He Tini Awa programme.

Finally, without John and Mary Culling’s (Finnis Farming Company Ltd.) willingness to sell parts of their farm, this project would not have happened. It was awesome that they recognised a win-win situation, where marginally productive very wet pasture land for farming could be turned into a thriving developing wetland for wildlife production that enhances the community. Thank you John and Mary Culling.

And finally, finally, many thanks to John Williamson, the local Central - Manawatu Queen Elizabeth National Trust representative. John does all the hard work in reviewing properties and presenting them for possible covenanting by QEII National Trust. He will also visit the Pohangina Wetlands covenant every second or third year to monitor its condition. These visits will be valued by the Trustees as an opportunity to share their pleasure in observing positive change, discuss any worries they have and work out together the best ways of managing Pohangina Wetlands.