

Submission to the Greater Wellington Park Network Plan 2018

The Friends Of Queen Elizabeth Park have 462 supporters. At every email we ask our supporters if they want to unsubscribe and we make it easy for them. We therefore believe that this is an accurate figure. We send out newsletters so our supporters know what we are proposing. They will know the Trustees stance on the perhaps controversial aspect i.e. the retirement of the complete Raumati wetland, of our submission.

This submission covers Queen Elizabeth Park only.

There are many things to congratulate GWRC over. The planting of about 15,000 pioneer species of trees per year, the co-operation received for the growing and planting of about 3000 enrichment species, the retirement of some wetlands, the taking on of suggestions from the Friends of Queen Elizabeth Park are some examples.

But submissions are about the future direction of the park and this is where the Friends have a different view to the park management of GWRC. Over the last few years, we have seen the dominance of farming over recreation and conservation. For example, we see the systematic changes to farmland that are steadily reducing the natural values of the park, e.g. water quality, and we know that there has been no progress on the eco corridor to the Raumati escarpment because it would require farmland to be retired. So this submission concentrates on the changes that we would like to see and the reasons for those.

Sections 1-3 of this submission to the Parks Network Plan uses the same structure as the legislation that the park is required to operate under, the Reserves Act, Section 17. We have written it this way to show how the legislation supports our submission.

Naming

We have used names that are not official rather than describe each location. They are shown on the maps at the end. The most important places in our submission are named and described below.

Whareroa Stream; the southern-most part of the Whareroa Stream from SH1 to the coast
Waterfall Stream; the west flowing stream from Waterfall Road to its Whareroa Stream junction

North Whareroa Drain; the drains from Poplar Avenue to their junction with Waterfall Stream. They drain the Raumati wetlands.

Raumati wetland; all the flat land between Poplar Avenue and Waterfall Stream (north to south) and State Highway 1 to beyond the low bisecting sand dune to the major sand dunes to the west. The Raumati wetland is currently in a damaged state. It has been drained and farmed for many years but it retains soil characteristics and vegetation that show that it was a vibrant wetland and could be again.

1 Recreation

The first requirement under the legislation of the park is to provide recreation.

1.1 General

The Friends would support certain types of recreation and oppose others. The Friends oppose intensive, exclusive, recreation that covers or is not in keeping with a natural, wetland/sand dune landform. This is because of the rarity of the landscapes of QEP and the parks unique location.

(Land Environment New Zealand's (LENZ) national environment classification has identified the entire QEP including the KNE as being in the top two threatened land environment categories - acutely threatened and chronically threatened Page 67 in Farming in Regional

Parks)

Examples that we would oppose or put conditions around are;

A golf course; It would significantly alter the landscape of the park.

The model Aircraft facility; almost constant noise in the middle of the park. We are not opposing them because they are in the park already. We think there should be a maximum noise level. We notice that model jets are now being used and are significantly louder than conventional aircraft.

Extreme events; unless infrequent and not taking over most of the park. This could be easier to manage when the new carpark is built.

1.2 The Raumati wetland Recreation and Protection Proposal

1.1.1 Recreation S17(1)

This recreational opportunity is a walking/cycle track through the Raumati wetlands to Waterfall Stream then down Waterfall Stream connecting to the multi use track. Note that the track exists as a farm track on the low dune bisecting the Raumati wetlands and our public have said that the current standard of track is approximately what they require i.e. reasonably rough. This track would provide a 5 kilometre return track for people or visitors from Raumati and a 3.5 kilometre of additional and alternative walk for walkers from the south.



1.1.2 Access S17(2)(a)

This track would significantly increase park access. It was used by walkers/runners until access was denied by Greater Wellington (local runner pers. com)

1.1.3 Preservation and protection (17)(2)

Our proposal would require the retirement of the low sand dune and the wetlands (peatlands) on each side of it (the Raumati wetlands of some 85 hectares). The peatlands and peaty soils clearly indicate where wetlands have existed for a very long time – long enough to build up a considerable depth of peat.

This retirement of these wetlands is supported by the Act as shown below.

Historical feature Section (2)(a)

This swamp is an important part of Maori history. Maori canoed through it and valued it as a source of materials and food. Carkeek records it as being part of the Great Swamp of early European times. The first European owners drained it. The draft park proposed plan laments that there are few stories to tell. The great swamp, its size and what happened to it and the restoration of this small part is a great story to tell. It includes our Maori past, our early European history, the development of New Zealand and the more recent movement to restore small portions of our natural lands.

Geological Feature Section (2)(a)

The Raumati swamp is a geological feature. It is a swamp, albeit a swamp whose surface features and water holding capacities have been damaged from continued draining and farming. The escarpment to the east where much of the water is supplied from, the sand dunes to the west define its extremities. Wetlands to the north have largely been developed and a cutting through the sand dunes direct to Whareroa stream terminate its southward extension.

Its shape, which is the one of the most important geological feature in terms of restoration and story telling, remains. It is dish shaped, so holds water from the escarpment trapped behind the low mid dune and the more major dunes sequence further westward. This is a landscape that people will understand once they are told the story of it.

The shape has been modified by a now disused east west farm access track but the effect of this could easily be removed if desirable. The channelization of Waterfall Stream has created raised banks that stop the wetland extending further south as it did in Maori times.

The geological features, the escarpment, the dish shaped land, the mid dune and the more westerly dune, make Raumati wetland the most recognizable part of the Great Swamp. If it is restored as a pallustrine wetland, with low vegetation that does not hide its shape, its visual geological significance will be preserved. Our understanding is that GWRC want to keep its drain and either farm or cover the areas surrounding the drain with kānuka/manuka mix. This will disguise the wetland and its visual geological significance will be lost to all except the trained eye. The way the northern wetland looks, with its low vegetation but probably with some open water (certainly seasonally) would preserve the geological appearance of the Raumati wetland.

Biological feature Section (2)(a)

The Raumati wetlands swamp features have not yet been overcome. Its water sources are still intact. It is very acidic having pH's of 4.33 to 5.92. It currently has a lowered water table that allows peat to oxidize and shrink but its nature as a swamp can be seen after a heavy rain event where standing water lies around the drains. The wetland has many areas where wetland flora and some fauna survive. These are mainly reeds and rushes. Some manuka still grow showing that wetland conditions remain. However parts that have been intensively farmed now show an absence of wetland vegetation and birds. This intentional destruction of a biological feature in a recreation reserve is unacceptable. While we have not undertaken a full survey of the four quadrants of the wetland due to restricted access, we believe that the southeast quadrant is representative.

Wetland birds, mainly pukeko, grey faced heron and Australasian hawk use the area. Denied access has prevented a more detailed study of bird species.

During recent drainage by GWRC many eels were found, both long and short finned. Whilst these fish were treated adequately the practice of removing weeds and build-up itself is destructive to aquatic life and the wetland. Note the "Statement of evidence of Stephen

Fuller (Ecological Mitigation, Environmental Management and Monitoring) for the NZ Transport Agency” dated 5 September 2012 where he said in section 45;

Most of these waterbodies are subject to regular “destructive” maintenance by... GWRC ...to remove build-ups of aquatic weeds and sediments, and so manage flood risk. The ongoing and regular nature of these activities significantly affects the ecological values of these waterways.

After cleaning the drain, GWRC reported that the water quality of the “stream” had improved. GW officers were comparing it to water qualities found in streams and failed to realize that wetlands have different water qualities.

Continued drainage and channelization is not compatible with the Reserves Act because it is not a beneficial ecological practice.

Preservation of native flora and fauna Section (2)(a)

Native flora and fauna would be protected under this proposal to the extent compatible with the principal purpose of the reserve. The principal purpose of the reserve is recreation. That is not currently happening because the land is being farmed. The proposed three wetlands in the deepest parts of the Raumati wetland and farming of the surrounding land will destroy native vegetation and therefore contravenes the Act. Observation from State Highway One from Waterfall Stream to the farm access road shows that those paddocks all the way to the low mid dune are cloaked in rushes. A small wetland in this area as proposed by GW and the Sustainable Land Use Plan (SLUP) would have most of this area farmed.

Recent farming in multiple paddocks of the wetland has involved the poisoning of the vegetation by herbicides, then the paddocks have been limed and fertilized and planted in brassicas. In these areas, there is little to no wetland vegetation remaining and consequently no fauna. This treatment indicates that if the present farming techniques continue, native flora and fauna will be systematically destroyed. This is not what the Act intended when it allowed farming. Proof of this practice in the Raumati wetland can be seen on historical images retained in Google Earth.

Soil conservation area Section (2)(d)

Drained peat and peaty soils oxidize and give off carbon dioxide. Figures of 20 to 30 tonnes per hectare per year have been calculated. The peat and peaty soils of the reserve are not being conserved. GWRC has allowed the lease farmer to attempt to convert them to productive farmland. The soils of the Raumati wetland are being eliminated.

Water conservation area Section (2)(d)

Farming especially of sheep require quite dry land surfaces and this is achieved by the continued draining or cleaning out of the North Whareroa drain. The latest cleaning out was 2017 and early 2018. Where the drain leaves the wetland to join Waterfall stream, it is over 2 metres below ground level.

The wetland would naturally have poor drainage. Its shape would allow water to rise and fall slowly in rhythm with incoming rain and other groundwater. This would be compatible with recreation as the Act requires but would be disruptive to farming. The current drainage practices are to keep the wetland paddocks dry. That was the reason the drains were put in in the first place.

The area is not being treated as a water conservation area.

1.1.4 Non Act requirement - Climate Change

Within the Raumati wetland recreational opportunity

Our understanding is that all Greater Wellington proposals must contain a section that identifies climate change implications. From GW’s Strategic approach to climate change, *Greater Wellington will act to reduce GHG emissions across all its areas of influence,*

including its own operations... But from what we read, these are purely to do with adaption to, not mitigation of, climate change itself.

The Raumati Wetland proposal would be one of the most significant actions that GWRC could take to combat climate change. The soils are described as *interdunal peat swamp with poorly or very poorly drained organic soils*, or *Flat poorly drained peaty depressions and swamp margins associated with sand country*. Soils are organic with >40 cm of peat overlying sand. So they are not good farmland. They are not good for climate change while drained and farmed but are good for climate change if rewetted and would revert to wetlands as they once were.

There are 5 effects to consider if drained and farmed peatlands are rewetted and restored as wetlands.

1. Drained peatlands give off between 20 to 30 tonnes of carbon dioxide per hectare per year. So the act of rewetting the Raumati wetlands would reduce Wellington region's agricultural CO² emissions by between 1700 and 2550 tonnes per year.
2. Fattening cattle for beef is the most negative climate change affecting farm production activity possible. That is because cows belch methane and because meat is the only product. Grazing sheep for sheep meat produces much less carbon dioxide equivalent. The current farmer does both. Stopping this activity would reduce carbon emissions.
3. Two other climate change considerations are the nitrous oxide from manure and from fertilizer. Nitrous oxide is a very destructive climate change gas.
4. When a wetland is rewetted, plant growth in wetlands is rapid and stores CO² in the plant material. The growth of plants act as a carbon sink.
5. In a wetland, rotting vegetation does not oxidize but instead turns to peat thereby storing the carbon below ground level. This happens only to a limited extent in forest where over time the majority of rotting vegetation oxidizes and turns back to CO². This makes wetlands better carbon sinks than forests.

Note that this would require rewetting the peatlands. The process is adequately described in "Understanding the wet in wetlands", a Greater Wellington publication. Expert help or experimentation may be required to establish an optimum average or minimum water level. The level in each quadrant of the wetland may be different.

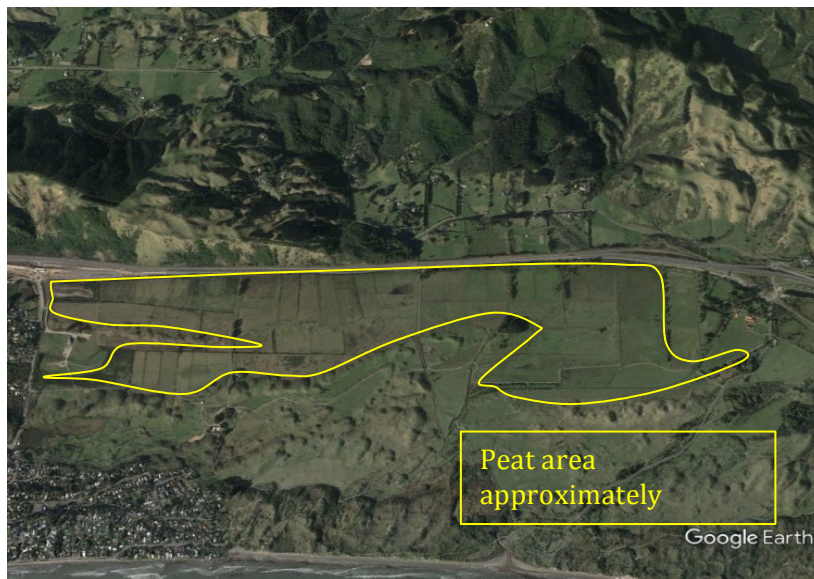
Raumati Wetland extension

The peatlands (soil types as above) extend much further south than Waterfall Stream. Greater Wellington Regional Council should consider the relative benefits of retiring all the peatlands of Queen Elizabeth Park. The total area is about 170ha. It does flood occasionally but is quickly drained by two cuttings through sand dunes that divert water directly to the Whareroa Stream rather than allowing it to follow the peat soils south of Waterfall Stream until they meet the Whareroa Stream. Rewetting this area may require blocking those diversions.

All of the climate change considerations above apply but taking only the first into consideration, about 3,400 to 5,100 tonnes of CO² would cease being omitted each and every year. The effects of the other three items would add to the overall saving.

Rewetting the peatlands applies as above.

While peat lands do emit some methane, the carbon they sequester vastly outweighs the methane they release.



1.1.5 Ecological Corridor - Current Network plan

The current Network Plan Page 92 shows an ecological connection between Whareroa Road and the Raumati escarpment. This ecological connection was part of the interconnection of the Raumati escarpment, the non-farm parts of Queen Elizabeth Park and Whareroa. This corridor in the current Network plan has not progressed. While much is made of ecological connectedness in the new draft plan, It is not shown in the new plan. It is still required and must be transferred to the new Network plan.

There are two methods to achieve this that are consistent with other proposals in this submission.

- 1 The retirement from farming and rewetting of all the peatlands in Queen Elizabeth Park See 1.1.4 would connect the Raumati escarpment to the main Whareroa Stream. The stream fences of the Whareroa could then be replaced to give a minimum 35-metre wide ecological corridor (agreed with GW) to SH1 (as close to Whareroa farm as it is possible to get).
- 2 The retirement of the peatland to the north of Waterfall Stream would connect the Raumati escarpment to Waterfall Stream. Waterfall Stream could have widened fences to the standard 35 metres down to its confluence with Whareroa Stream and the same for Whareroa Stream to SH1 (as above).
- 3 If the peatlands were not retired, those paddocks nearest SH1 in the Southern Gorse Block (section 4, 6, 9, 10, 12, 13, 15, 16 and 17) could be retired. These are very acidic (pH 4.43), are vegetated in reeds and should not be farmed. They would provide a connection with the Raumati escarpment, the retired land of the North Gorse Block and Waterfall stream. The above changes to Waterfall Stream and Whareroa Stream would then give effect to the ecological corridor of the current Network plan.

For a bush connection to the Raumati escarpment through the Raumati wetland, we envisage the use of the low mid dune and the disused farm entrance road.

1.1.6 What is wrong with the three small wetlands proposal of the Current Network plan?

The Raumati wetland consists of four interconnected dish shaped areas formed by the North/south low dividing sand dune and the east/west disused farm access road. The plan envisages a small wetland in the lowest point of 3 out of 4 of the dishes.

The plan is not bold enough and does not recognise the need to restore the wetlands we could have and the benefits from rewetting peat swamps. (2-3% of wetlands left in the Wellington Region)

Much is made of the problems associated with not farming this area.

- Reversion to gorse and the risk of fire.
- The risk of fire in the underground peat
- The control of water from the expressway.

The Maclean Trust area is also mentioned. There are aspects of the Maclean Trust work that are flawed and that does not bode well for the rest of the Raumati wetland.

The Maclean Trust area contains part of the most northeast dish and a small part of the northwest dish. About a quarter of the northeast dish remains as farmland. It does not require a genius to understand that if a quarter of a dish (the farmland) is to remain dry and not flood, then the rest of the dish must also remain dry. GWRC are calling this a wetland because the storm water from SH1 will be drained through the land to the North Whareroa drain, but the wetland will in fact be a wet slope. If the quarter dish farmland was included, in the Maclean trust deal, the water exiting near the southwest corner could be raised with a construction that allowed for fish. The sides of the dish would be State highway one, Poplar Avenue, the dividing sand dune and the disused farm access road.

The complete dish could be dechannelized as iwi and conservationists want. The risk of fire in the underground peat would no longer exist because the peat would be rewetted. Gorse and blackberry control would largely be limited to the margins and small high spots because neither gorse nor blackberry is a wetland plant and dies in higher water levels. Flooding would not be a problem because the water would be able to spread over about 20 hectares rather than being confined to a small deep channel. The Reserves act would be satisfied by preserving a historic wetland (the Great swamp) and the reed-lands that grow in this now semi wet land. The cost would be small (some engineering and trial (maybe) in terms of optimum water levels and planting of the drier margins only). The local populations would be satisfied because aerial spraying would no longer be required. The rewetted peat would stop emitting 20 to 30 tonnes per hectare of green house gas to the atmosphere and soon would absorb more CO² and sink it as peat.



Gorse killed by high water table in southern QEP

This treatment of this quadrant of the wetland could be applied to the other three quadrants. There are specific points that could be used to control water levels. These are where the drain passes through the mid dune, where it crosses under the disused farm access road and where the drain approaches Waterfall Stream.

The drain at the outlet of the Raumati wetland is over 2 metres deep from land surface to the water level where it enters Waterfall stream. This depth is what is needed to drain the four dish shaped land areas of the Raumati wetland. There is ample height to rewet the four dishes. We have seen examples of this sort of control along the Kapiti expressway.

1.2 South East Recreational Proposal

1.2.1 Recreation S17(1)

This is a walking/cycle route from the Wainui bridge up the south eastern side of the park to the park's highest point, then eastwards towards the railway to the Wainui wetland, then north until it meets the southern track in the Dune swamp.



Note that this would be a marked route rather than a cut track. Our public have said that the views from the highest point in all directions are spectacular and this proposal would provide a 3km return walk from the Paekakariki end of the park but would also provide an eastern route to the Dunes wetland/forest complex and to the walks from Whareroa road.

1.2.2 Access S17(2)(a)

This route would increase park access to some of the southern natural areas of the park, for instance to the Wainui wetland and then to the Dune swamp/forest complex. It would also require the retirement and fencing of part of the eastern boundary of the Paekakariki Boundary block and part of the southern and eastern boundary of the Perkins Boundary block.

1.3 Other recreational opportunities

1.3.1 Tracks

Queen Elizabeth Park is used by Kapiti's aging population i.e. disabled walkers, runners, bike riders and horse riders. Some users are compatible on the same track and others are not.

There is a requirement for informal single tracks (a mountain-bike term), where a biker or walker can leave an official path, ride a single track and re-join. These can be very narrow and recognise that someone (probably both) must give way if two users are on it. Some trails already are, but more could be, only for horses.

Tracks should not be straight long stretches, which are uninteresting. Rather they should curve, revealing the landscape. Some would be through planted areas, which gives a different experience to the user.

There also should be specialist tracks that provide interesting experiences, e.g. seeing weta in mahoe copses; providing high viewing points or special views; seeing native fish or kohekohe pollination, or divaricating plants.

Areas of the park should be kept non-busy where people can relax in solitude.

When the Raumatī wetland is retired and the walk through it established, some boardwalks may be required. How these work with different users is important to think out and plan before building begins.

We think that a park track plan is needed, not for park users but for GW planning. Such a

plan would have shown up the loss of horse-riding tracks when the Te Ara o Whareroa multi track was built. It would show the shortage of tracks for the disabled and how little of the park has access into it because it is off limits due to farming.

We think this should lead to zoning. We would not want to see bike tracks through ecological areas and there should be areas associated with park entries where people can sit peacefully and contemplate and not have bikes whizzing around them. Ecological and solitude areas could be synergistic.

Single tracks could be in a zone close to the Te Ara o Whareroa path, the Yankee trail or Whareroa Road leading off them and back on. These areas have various traffics so establishing them alongside would zone them in areas where noise and busyness already happens. They may not have to be made – rather allowed in defined zones.

Such a plan might indicate the need for more land to be retired from farming or the track(s) might transit through farmland, separated or not. Zoning and good planning and management is also important for large events such as adventure racing. Centering this activity at Ramaroa using the soon-to-be-two car parks might relieve the pressure on the picnic areas at the coast. Zoning could also determine where those more intense activities could take place.

1.3.2 Specific play areas

The park should provide for play for, among others, the local communities. The following ideas have been raised and are supported by the Friends.

1.3.2.1 Discovery play areas for children. These relate to the natural world provided by QEP and few other places.

1.3.2.2 “Explore our Park” concept. Perhaps an online or paper map showing all the different environments, habitats, activities, flora and fauna that people could find in different parts of the park and a suggested route that takes them there, maybe numbered so they can “knock them off”.

1.3.2.3 A “pump and jump” area for bikes. When Te Ara O Whareroa was being built, there was a pile of clay soil dumped close to Whareroa Road. It was an area where people had fun on bikes. It became what bikers made it, rather than was made for bikes.

1.3.2.4 A place with natural materials where children can build and experiment. When we were young, we cut down bush and made huts and other shelters. We don’t want people to cut down trees anymore but if such an area existed and it was understood that this activity was here and not elsewhere, that might give some children a taste of what we had.

1.3.2.5

An area that, with ranger approval and some slight structure, Scouts could use to have a “remote” or “tame wilderness” experience, staying overnight. By slight structure, we cite the concrete ring about 2 metres across that is used in Australian outback camps to contain fires. There might have to be enough space for a modest camp. This would not conflict with the holiday park. It would need to be located where most could agree to it – away from main tracks, not in a wetland dune complex because of high biodiversity values, and it would need the input of local Scout leaders.

1.3.3

Many people simply walk the park and look at interesting things. Areas can be made more interesting. Perches, maybe just a complex log and branches shape, can be sited so wetland birds can perch where people see them. A fenced-off area where native stinging nettles can be grown to encourage butterflies. An area of the Whareroa planted to suit the spawning of native fish with a sign telling people the spawning life cycle of native fish. This sort of development of interesting things could develop over time and add to the Explore the Park concept See 1.3.2.2 above

2 Preservation and protection (17)(2)

There are areas throughout the park that we seek to have protected from farming practices because they are geological or biological features.

2.1 Raumati wetland

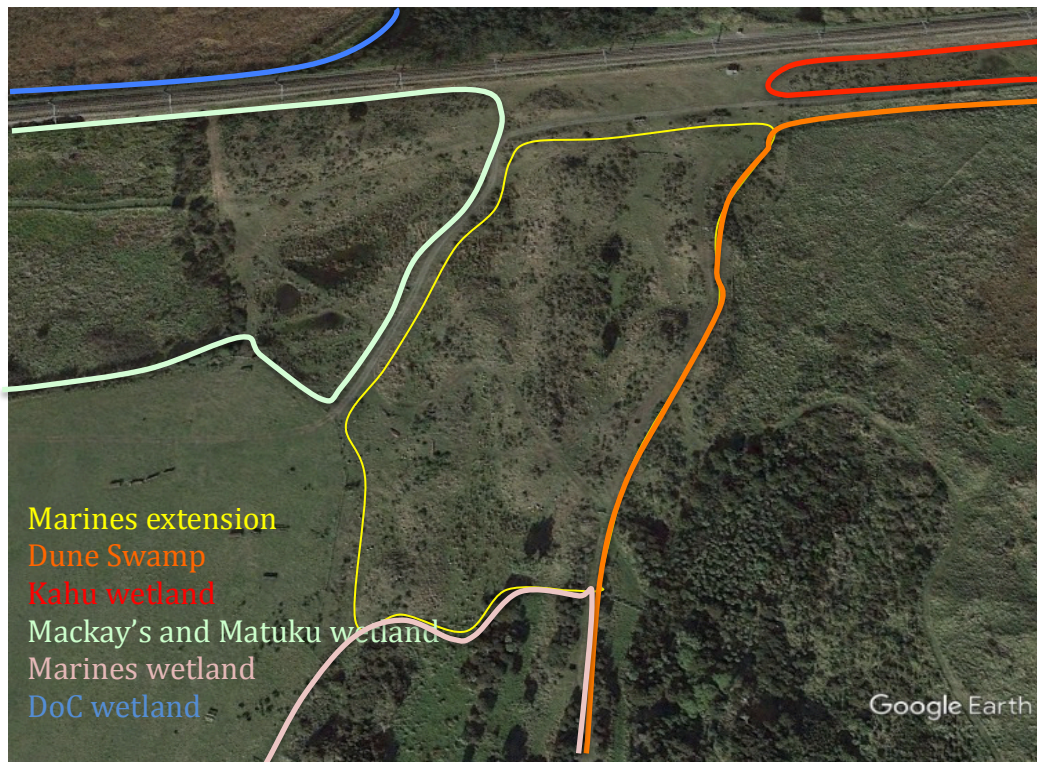
See 1.2 above

2.2 Marines wetland extension

The area that this submission requests to be retired from farming is part of the equestrian block between Mackay's wetland and the Dune Swamp (not the eventing paddock nor the water bore area). We have no objection to a farm track and horse trail passing through the area but the farm track must be fenced.

There are several reasons to retire and protect this area.

- 1 KNE GW Documentation Part of it has been identified as a Key Native Ecosystem (KNE). We agree with GWRC's statement regarding KNE's (below) but cannot reconcile it with ongoing use by cattle and sheep. *The Key Native Ecosystems programme aims to provide ongoing protection to maintain or restore the native plants and animals, as well as the ecological function by managing threats, like pest plants and animals. The protection of these areas is an invaluable investment in the future of Wellington region ecosystems and under How do we protect them Stock exclusion measures to protect ecosystems from being trampled or browsed by livestock.*
- 2 Ecological connection GW Documentation The area is an ecological connection between Mackays wetland and the Dune Swamp. Furthermore it is shown within an area in the current park Network plan that is part of a project for Forest remnant extension / wetland restoration. Finally, there is an arrow on the existing Park Network Plan indicating an ecological link between Whareroa Farm and the Remnant Forest wetland complex in Queen Elizabeth park that passes through this area. It is not indicated on the new draft plan. The ecological connection cannot be viable if the area is farmed.
- 3 Ecological Connection Actual The area is uniquely placed to connect four existing natural areas – The Dune Swamp, Mackays wetland, Marines wetland and the DoC raupo wetland on the other side of the railway. On a slightly larger landscape scale, this and Mackays wetland are the only currently possible connection from the Dunes swamp complex to Whareroa Farm.
- 4 Wetlands The area has 3 small wetlands within it. One of them is an extension of the Marines wetland. They should not be subject to cattle and sheep trampling, eating defecation and urination. They are not fenced.
- 5 Size One issue facing ecological areas is that many are small and cannot support a range of species. Every effort should be made in an ecological area to connect and thereby increase the size of ecological areas. *Size tends to influence species and community diversity, stability of interactions, ability to recover from extreme events, potential for regeneration, migration or seasonal movement, protection from plant pest colonisation, impact of edge effects, ability to retain nutrients.* Ecological Restoration in the Wellington Conservancy Phillip Simpson 1997. The interconnection of these 4 areas (Mackay's wetland, DoC wetland, Dune swamp and Marines wetland) and the connection to Whareroa are part of the preservation and protection of the natural features of Queen Elizabeth Park. The retirement and restoration of this small (two ha) area would achieve the connection of these 4 separate wetlands



2.3 Dune wetland

This small wetland has been fenced in preparation for retirement. Wetlands perched above the water table within a dune system so close to the sea are rare so this wetland should be retired and appropriate planting around it begun. Part of the valley that feeds it to the west then south should have stock excluded and be planted in carex of similar to decrease the farm products flowing into this wetland.



2.4 Four metre wetland

This is a wetland that is identified in the SLUP on the northern side of waterfall stream. This wetland would flood during rain events and possibly does not because Waterfall stream has been confined by channelization and the material dug out of the channel is used to build up the sides. If the side was broken down, high water events would flood four-metre wetland. The only planting required would be the sand dunes that rise steeply from its edges. The retirement of this wetland would also be part of the 15 metre riparian margin for Waterfall Stream.



2.5 Deleted wetland

This is no longer a wetland. Rather it is a weedy clay filled bit of land north of the farm building. It should not be restored (as suggested in GWRC documentation) nor take up resources while other less damaged wetlands that could be restored are available.

3 Farming

3.1 General

Farming is an activity that is allowed under the Reserves Act where there is no other activity of higher priority such as recreation and conservation. While farming may reduce some significant weeds, it comes at a cost to recreation and the natural features and flora and fauna of the park. Farming takes place on 60% of the park.

3.2 Financial

Unfortunately GWRC have so far refused to give a financial overview of their costs of farming, the return they get for allowing it, how that money is used in the park. This is crucial if financial arguments are raised. For instance in the last few years, our understanding is that GWRC has paid for fencing of much of the park, has paid for the renewal of much of the water management of the park for the farm and some weed control. There have been three buildings (one a shift and rebuild) in the park. We have no idea how much money went into these buildings. We do not know and cannot see the financial benefits or costs of farming. We note the statement in the supporting documentation is vague. ***“Depending on the park managers and councillors agreement, this might mean we can invest in more recreational infrastructure and restoration projects... . Does this mean that after water, fencing, farm spraying, buildings, maintenance have been paid for, and if the park manager and councillors agree, this might etc.? We simply do not know because the information is not given.***

3.3 Loss of access

Some years ago people jogged down the low bisecting sand dune of the Raumati wetland. This is no longer allowed because it is farmland. The walking tracks tend to be there-and-back rather than large circular walks because farmland is in the way.

3.4 Loss of native flora and fauna and water quality.

Under the previous farming regime, there were native plants, reeds grasses etc. in amongst the pasture. There would have also been native insects living off those native and non-native plants.

The current farmer prefers pasture conversion. We have seen very high percentages of the park sprayed with herbicides to achieve this. In one major event we learned that 7 herbicides were used to eliminate the pasture. The land turned brown with rotting vegetation. It is very unlikely that any native plants survived this. To deal with springtails, 2 insecticides were used. It is very unlikely that any native insects within the spray zone survived this from the use of insecticides, and the removal of the plants they lived on.

Pasture conversion is undertaken because it allows greater productivity. (It does not matter how this is measured.) Greater productivity means that there is greater runoff of farm products. Small channels extend out from fenced waterways into these paddocks. They transport herbicides, insecticides and animal products to the streams. These small channels are not fenced or planted. Scientific literature tells us that this is the major source of pollutants to streams and planting the sides of streams is not that effective at taking up farm products because of this. This method of achieving greater productivity in QEP means that the streams exist within dead or exotic fields.

Where conversion has been (sort of) successful, there is a reduction in reeds and rushes and most likely any other native plants that grow in pasture. We also know that water values have declined. Water tests were taken through farmed parts of the park over a 3 year period to try to show that planting the sides of streams would improve them.

A control site (Site 1) was also chosen. This site has a retired wetland, a spring, some horse paddocks and a small amount of farm paddock runoff feeding it. Site 2 was essentially stream water input to the park. Only water from the horse paddocks could have affected the water quality at the site.

Sites 3,4 and 5 received farm paddock runoff.

At each site, macroinvertebrates were sampled using a 250µm meshed travelling kick net along the 50m reaches. Samples were stored using 95% isopropanol then identified and counted in the laboratory according to previous publications (Cowley 1978; Winterbourn and others 1989; Towns and Peters 1996). Macroinvertebrates were used to calculate the Macroinvertebrate Community Index (MCI), which provides a long-term indicator of water quality as driven by nutrient enrichment (Stark 1993). Fish were surveyed by spotlighting one pass of the 50m planted reaches and identified (McDowall 1990).

The results are shown below.

MCI			
Sites	Year 1	Year 2	Year 3
1 Control	54	51	43
2 Natives	111	106	122
3 Ngaio	98	87	43
4 Willows	109	105	53
5 Tagasaste	95	80	57

The sites that have a farming input and are alongside farm paddocks, sites 3,4 and 5 have declined significantly. Site two which cannot receive any farm runoff shows improvement and site 1 that has multiple inputs has declined slightly. While the report decided that 3 years data was insufficient to indicate that plantings were having an effect, the data is a strong indication that water qualities at farm affected sites are declining. This should be no surprise because around NZ the same story is happening where farm productivity has increased.

Queen Elizabeth Park is subject to the Reserves Act and we know that the protection of flora and fauna are written into the farm agreement. But the farming methods used and the

results, so far as we can see and measure, indicate that farming is causing the decline of both native flora and fauna. The Act puts the protection of flora and fauna above farming so the new network plan must make changes to reverse this.

3.5 Fencing streams

When fencing renewal around streams began over the last few years, GWRC and the Friends had not agreed any fence distances. Consequently most of the fences are not at the now agreed standards. Fences will only be replaced at the agreed distances when they fall into disrepair. GWRC has lagged far behind many farmers with respect to fencing waterways whereas they should be leading the charge.

3.6 Planting stream-sides

GWRC has not undertaken planting of its farmed streams. Planting has been done by the Kapiti Biodiversity project. The statement in the supporting document to this draft that, "At QEP, the entirety of the North Whareroa drain has been fenced to exclude stock and a ten metre buffer either side of the drain has been planted with native vegetation." This is simply not true. No planting has been undertaken. Nor is there any plan to plant waterways. As above, GWRC has lagged far behind many farmers with respect to planting riparian strips around waterways whereas they should be leading the charge.

3.7 Stream riparian widths

We support planting on the sides of streams. We are pleased that we have been able to agree some widths of riparian strips with GWRC. We would like to see those as minimums written into the PNP and applied across all parks.

They are

- Where streams are used as eco corridors 15 metres from each streamside to fence or 35 metres fence to fence. This applies to southern Whareroa, and waterfall stream.
- Where major streams or drains exist in farmland, 10 metres from each streamside to fence
- Smaller channels Not yet decided. We need advice as to whether the riparian strip can be reduced below 10 metres without compromising its effectiveness.

We are surprised to find that this agreement is not within the new draft network plan.

3.7.1 Channels into farmland

We note in scientific literature that while planting the sides of streams is beneficial for a number of reasons, most of the deleterious farm products that enter the waters come from small waterways that extend out into paddocks. This happens in all paddocks in the flat land of QEP. The small waterways extend across all of the paddocks for most of their length and in some paddocks there are more than one.

Unfortunately cattle will eat *Carex secta* and even flax so this suggests that the only method to stop these products entering the water bodies is to fence the small waterways into the paddocks and plant them with plants like *C. secta* within the waterways themselves.

Another method of improving the situation may be to lightly stock and lightly exploit the land (low use of fertilizer etc.) There are examples where a reduction of farm inputs and a reduction of stock can yield a very similar profit.

3.8 Protection of dunes.

The dunes are fragile and with the current farmer we have seen some degradation of them. In particular an increase of as yet small sand blowouts is observable. Once started, these continue to grow resulting in the loss of topsoil. Farming causes this. It simply does not happen in retired areas of the park.

3.9 Protection of wetlands

For some time, the Friends of QEP have been arguing for the retirement of all wetlands in QEP even though some of these wetlands appear as farmland. GWRC has fought these suggestions and denied that some wetlands existed. The document suggests that GWRC will retire and fence the lowest lying parts of the Raumati wetland. But recent cleaning of the drain will maintain the current water levels and the wetlands will be surrounded by farmland. We have proof of the previous existence of the Raumati wetlands from historical documents, from first hand accounts, from Lidar information and from GWRC's own documentation. The present farmer employed an agronomist to measure the pH's of the Raumati wetlands. The results recorded in 3 out of the 4 dish shaped wetlands of the Raumati wetland are 4.63, 4.43 and 5.92. The agronomists note say "It is fiercely acidic to the point that the roots of brassica seedlings went horizontal just below ground level to avoid the hostile soil then failed due to lack of moisture."

GWRC has not protected these wetlands rather the reverse. Google Earth records some instances when the farmer sprayed to kill off existing vegetation, probably used insecticides as described in 3.4 above, most probably applied lime to change the chemical nature of the wetlands, applied fertilizer and drilled brassicas. On this land, that previously had pasture including native vegetation particularly reeds and rushes, and includes an area that goes under water during rain events, and only drains because GWRC cleaned out the North Whareroa drain, and would quickly revert to wetland if the water table was raised, GWRC allowed, if not promoted, the further degradation of this potential wetland.

This raises an interesting point of law pursuant to the Reserves Act. The Reserves act while not specifically stating it, assumes that sooner or later the whole of the reserve will be use for recreation. Part of a reserve may be used for farming, if for the present time, it is not needed for recreation etc. If GW manages to have the Raumati wetlands changed by farming methods into dry-ish farmland and changes its chemical nature so that wetland plants cannot re-establish, then have they not subverted the intention of the Act?

The supporting documentation also mentions the Maclean Trust agreement. This area is dish shaped and was very much a wetland. Part of that dish will not be retired as part of this deal. It will be kept as farmland. If the paddocks were included, the water level in this dish could be carefully raised and the wetland would recreate itself with planting around the edges and on high points. But because of farming (the 7 hectares of paddocks in the dish have not been included), the water level in the drain will be maintained and kānuka planted on the retired land. The planting of kānuka will change the character and the look and feel of the wetland. It will change it from a wetland environment to a somewhat wet kānuka environment and maintain farm paddocks on the other side of the drain. This was certainly not what Maori paddled through.

The Southeast quarter of the Raumati wetland is completely covered in reeds and rushes and has some open water most of the year. This can easily be seen from SH1. If the whole of this quarter is not retired, farming will continue on land that is obviously wetland.

3.10 Canada Geese

Farmland appears to be the favoured habitat for Canadian Geese and we have noticed a very big increase in their numbers in recent years. At times they take over the Marines wetland. We think they are responsible for the large amount of bird poo on the shores of the Marines wetland. If they were native, we would have to celebrate this but they are not. With less farmland we may have fewer. Perhaps GW should arrange to periodically have them culled.

3.11 Conclusion

We have not seen a financial overview of the farming operation so we have no option but to ignore it. People are not allowed access because of farming. Terrestrial and stream flora and fauna are negatively affected by farming. The waterways have not been proactively fenced with adequate buffer zones when the effects have been known for decades. GW has not planted nor has plans to plant its waterways. Blowouts are appearing on dunes. Attempts have been made to permanently change the lands acidic chemistry so that the natural vegetation of the Raumati wetland could not recur. A chance to restore a quarter of

the Raumati wetland as a wetland has been frustrated by keeping two paddocks for farming.

We are forced to conclude that farming is not in the interests of the park and its users and GWRC are unable or unwilling to demonstrate that the financial gains offset the damage. We see a farm with some recreation and conservation in it. The Reserves Act specifies an opposite view – a recreation and conservation park with maybe a farm in it. If GWRC had accepted this, then we may have not reached the conclusion below.

We therefore conclude that over a period of time farming should decrease until there is no farming in the park – a managed retreat.

3.12 Beehives

Bees from hives are not native; therefore they are essentially farming native vegetation. Non-native pollen collectors deprive native pollen collectors. This is particularly important where large numbers of hives are located in areas low in food that native fauna use. There is a recommended rate of hives per hectare. From what we have seen, the number of hives located in QEP in one location is high. GWRC should seek advice and determine a maximum number of hives per area factoring in the distances bees fly.

In QEP, because of its history, native communities are being built up. First the plants, and their foods for insects, birds etc. have to be built up to support native fauna. Slowly, native fauna will increase. That will help spread the floral community. Extraction for a commercial opportunity is not appropriate unless it can be shown that the park benefits in some other way. That has not been shown.

4 Fixing Existing Park issues

There is a fish barrier at the entrance to Mackay's wetland that needs to be fixed. We think that this was constructed by GWRC to raise the water level in Mackay's wetland. It not only affects fish to the Mackay's wetland but also to the DoC wetland that flows into it under the railway. The barrier cannot be removed without draining Mackay's wetland so we have suggested that a dam to raise the water level be constructed on the northern side of Whareroa road where there is plenty of room (length). This could be built so it did not impede fish. This would mean that the pipe taking the stream under Whareroa road would be submerged, or almost so, most of the time. We note that the Kapiti expressway has mostly submerged water pipes and this appears to be good practice lowering water speeds and increasing water cross sectional area.

A second fish barrier is further down the same stream under the Whareroa walking track. This is a perched culvert. A load of rocks would probably fix it.

5 Ecological Connections

5.1 Connections shown in the current Park Network Plan

During the last round of submissions, several submitters asked for an ecological connection between the Raumati escarpment and Whareroa via Queen Elizabeth Park and this was agreed to and shown on the Network Plan.

Connecting to the Raumati escarpment

It appears from the location of the dotted line on the existing Network Plan that GWRC believed that this would be achieved as the Kapiti Expressway was built along the side of the park. Expressway plans changed so the corridor has not been implemented.

The Friends have suggested to GWRC that this could be achieved by having the ecological corridors located along the Whareroa and Waterfall Stream. This has generally been accepted. GWRC has agreed that where streams are used as eco corridors a

width of 15 metres revegetated from each side of the stream or an overall width of 35 metres fence-to-fence is the standard. Where walking/riding tracks are also included, 35 metres should be the measure used. This is because the tracks are two metres wide. It was generally accepted that this would be achieved as fences needed replacing, but given that neither ecological connections were implemented during the plan lifetime, we submit that once planting is complete within the existing fences, a new fence on one side or the other should be replaced so that planting the wider space can begin.

The north end of this corridor needs an appropriate connection to the Raumati escarpment. At a minimum this would require a planted connection through the southern gorse block on the dune then east via the farm access road so that fauna would only have State Highway 1 to cross. Without this, the Raumati escarpment will remain isolated.

Connecting Whareroa farm to the Remnant Forest

This requires the retirement of Kotuku wetland see 2.2 above.

We note that the eco corridors on the previous plan have been omitted yet earlier parts of the draft new document cry their importance. It is important to include them.

4.2 Bush to sea connections

There are 3 bush connections that are possible with little cost. They traverse the park from Whareroa farm to the sea so connect the hill country of Whareroa to the coastal landscape via the wetlands trapped behind the dunes. The retirement of some of the farm will be required but the areas are small.

4.2.1 The Whareroa Stream

This is a logical connection from Mackay's wetland and the entrance of the Whareroa Stream into the park to the sea. All that is required is the continuation of the removal of weeds, (willows and blackberry mainly) continued planting, the shifting of fences to new widths and continuation of planting.

4.2.2 The Whareroa Road

This again is a relatively straightforward exercise and is underway. It only requires continuation.

4.2.3 DoC wetland to the Remnant/Dune swamp to the coast

First this requires the retirement of the land mentioned in 2.2 above. Planting this block will connect the DoC and Mackay's wetland to the Remnant/Dune Swamp. The Remnant/Dune Swamp complex connects to the Yankee Trail. Not far away along the Yankee Trail is Totara gully, which is connected to the retired coastal areas. This is a logical third connection to the coast but it will require the retirement of a small amount of land around the Yankee trail between the Dune Swamp and Totara gully.

5 Features of QEP that should always be considered when making decisions

5.1 Unique

The QEP landscape may not be unique, but in the Wellington Region there is nowhere else where almost all the land between sea and sky is in public ownership and has a width that is ecologically worthwhile. We refer to the Tararuas (DoC), the Akatarawas (GW), Whareroa farm (DoC) and QEP (DoC). This sea to sky area also has two protected wings almost connected: the Raumati escarpment (zoned open space and too steep for development and the Paekakariki escarpment (TransRail covenanted). The unique aspects of QEP are:

- That it forms a junction between these protected blocks of lands,
- It connects the blocks to the sea (as does the Paekakariki escarpment) and
- It alone can provide the additional environments of extensive wetlands and sand dunes.

These facts alone support our view that recreation should not cover or essentially remove parts of the landscape, so areas should not be annexed for a golf course whereas there is no problem with horses sharing access tracks.

5.2 Rare

Wetlands and sand dunes (without human development covering them) are rare or uncommon in the Wellington region. There are 2-3% of wetlands left. QEP has no other land types. The land is either sand dune or wetland, so it is easy to argue that it all should be preserved. Note LENZ comments in 1.1 above.

5.3 Size

Small wetlands exist in many places in the park but size and inter connection is important.

In the southeast of the park, the wetland/sand dune forest complex is a reasonable size but one parcel of land containing 3 small wetlands is farmed and divides the Dune swamp complex from Mackay's wetland. Cattle trash the small wetlands. If this mere two-hectare block were retired, the complete southern wetland complex would exist as one contiguous area. Please remember that large wetlands cannot occur in many places. They need geography. By that we mean, the shape of the land has to support the wetland as it does at the bottom of the escarpment. They cannot be relocated.

5.4 Connectedness

When two areas of forest or wetland are connected, they act to some degree as one area allowing migration of both flora and fauna. If a park plan showing the natural areas and the wetland/streams and bush connections was produced, That would clear up much of the confusion of what is going on in the park and we could all work towards one plan. Appendix Two shows the connection we would like to see.

5 Priority

Priority should be given to wetlands. This would help the dearth of wetlands in the Wellington area.

The first wetland to be retired should be the Raumati wetland because of its size and because it will help with climate change if rewetted and allow the development of an ecological corridor to the Raumati escarpment. The second retirement should be the Kotuku wetland because it will connect Mackay's wetland and the Dune swamp, will allow the development of the Whareroa to Dune Swamp eco corridor and it is such a small ask.

We think the peat-lands or peaty soils outside the Raumati wetlands should be considered for retirement next.

There is almost universal agreement in NZ that water quality should be improved so moving farming away from waterways, planting and dealing with paddock channels should continue as rapidly as possible. We think that as much of the present planting as possible should be diverted to stream riparian planting.

This would allow a reasonably large area to continue to be farmed for some time and possibly be retired, as planting capacity was available. Small sand blowouts should be dealt with as they occur.

6 Resource Consents

QEP is public land - land that when required for recreation, is not as it was, has been changed with public involvement. It seems to us that when a resource consent is required, then the public has a right to know and a right to comment or object. This issue is raised because of two instances.

- 1 When wetland that the SLUP, (produced by P A Handford and associates), said should be a wetland, was filled in with clay from State highway 58, GWRC applied for a resource consent from KCDC. It was decided that notification of the public was not necessary. Now there is the suggestion that the wetland be restored. The same or a different outcome may have resulted if the consent was publicly notified. Public land has been significantly changed (significant enough to require a resource consent) without the public having a say.
- 2 Greater Wellington applied for resource consent to work in all the streams and drains in QEP. It applied for the longest time possible (we think 25 years). The Friends of QEP and local iwi were asked to submit on the application. The public were not notified. GWRC granted the application to GWRC. When the North Whareroa drain was "cleaned out" 5 public groups objected. The Chair of GWRC wrote to the groups saying that the work would continue and quoted iwi support. Iwi said in an email to the Chairman that that statement misrepresented them and they wanted de-channelization. As above this application was not notified to the public yet six significant groups objected to work under it.

In our opinion, public input should always be sought when an application for a resource consents is applied for in regional parks. It would result in a better outcome and improve the reputation of GWRC.

Appendix 1 Peat

The map in 1.1.4 shows the peat and peaty soils in QEP. The map of soil types in GWRC's Sustainable Land Use Plan gives a more detailed picture but agrees with the map shown.

The validity of rewetting peat is supported by the publication "Drawdown; The most comprehensive plan ever proposed to reverse Global Warming." It is a coalition of leading researchers, scientists and policy makers. Each subject has been peer reviewed.

Peat develops over hundreds, even thousands of years, as a soupy mix of wetland moss, grass and other vegetation slowly decays beneath a living layer of flora in the near absence of oxygen. That acidic anaerobic environment... layers of peat contain enormous amounts of carbon. When peat is exposed to the air, the carbon it contains gets oxidized into carbon dioxide. Rewetting is the chief priority, a ... process that aims to saturate an expanse of peat by retaining water and raising the water table. In other words, stop water escaping and reflood the soils. Once the peatland is wet again, oxidation and carbon release is curbed.

The rewetting of peat is only one solution to climate change. It is an easy and cheap one to implement and it does not impact on people's lives.

Appendix Two wetland and bush Frameworks

The wetland and bush frameworks are what the Friend's suggest. They generally use existing retired wetlands and fenced streams. The retirement of some wetlands, GWRC has not agreed on yet. Those not agreed on are shown with red circles around them. Three of the wetlands are small in terms of farming – a few hectares. One of the wetland areas doubles as a bush area. The forth is the Raumati wetland that we acknowledge is very big – about 85 hectares. The three bush connections missing to connect up the significant areas of bush within and external to the park are very small indeed.

The implementation of these frameworks would provide the park with a viable ecological framework that it currently does not have. It would allow all the small natural sections of the park to work together and to connect to protected natural lands outside the park.

