



Natural Wellington

*A plan to preserve and enhance the
Natural Treasures of Wellington City*



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The Wellington Branch of the
Royal Forest & Bird Protection Society

Contents

	Page
1. Introduction	1
2. Our Mission	3
3. Who Will Benefit?	4
4. What are our Natural Treasures?	6
5. Threats to the Treasures	10
6. The Way it Was	12
7. The Way it is	15
8. The Way it Could be	20
9. How to Get There	23
10. Broad Action Plan and Timetable	26
11. Resource Implications	28
12. Conclusion	29
13. Credits	29
 Appendices:	
Appendix A: List of Significant Ecological Sites - Wellington City Area	31
Appendix B: Map - Location of Significant Ecological Sites - Wellington City Area	39
Appendix C: Suggested Native Plants Suitable for Replanting	40

About the Royal Forest and Bird Protection Society of New Zealand Inc.

The Royal Forest and Bird Protection Society of New Zealand Inc. was formed in 1923 in response to the destruction of our natural heritage which was occurring at the time and, particularly, to save Kapiti Island.

Currently it has over 60,000 members in 46 branches across New Zealand.

The aims of the society are:

**To protect New Zealand's native species, natural ecosystems
and landscapes and promote an appreciation of these.**

Membership of the Wellington Branch is growing rapidly. At present the branch has approximately 5700 members.

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1

Introduction



Wellington City and the surrounding district is biologically one of the most heavily modified parts of the Wellington region and, indeed, New Zealand. Some even consider the area to be an environmental wasteland. Certainly, natural Wellington now is a long way from natural Wellington 1840. However, we do have some natural treasures, such as coastline and forest, remaining and many others are struggling to emerge and survive. Despite being so seriously disturbed environmentally, Wellington does contain a number of interesting habitats and rare fauna and flora.

About this Plan

This plan is intended to set out a long term vision of the future of the natural treasures of Wellington. It represents the views of the Wellington Branch of the Royal Forest & Bird Society of New Zealand Inc. and sets out the branch's long term agenda. It has been produced not as a definitive scientific work but as a reminder of what we have lost, what we have left and how we can preserve and add to what remains. It covers only the natural ecosystems and animal habitats and does not intend to cover the full spectrum of green issues - such as pollution control and the human environment - except as they affect the natural ecosystems.

It attempts not only to set out the current and ideal situation but to suggest practical ways of achieving the ideal at all levels of impact - local government, corporate, small organisation and individual.

Why is such a Plan Necessary for Wellington?

Currently the world-wide environment is under threat as never before and humankind is responsible for this threat. All around the world rainforest and natural habitat destruction and species extinction are currently major issues that are concerning all thinking people. It's easy for Wellington people to point the blame at others and forget that we destroyed 99% of Wellington's lowland rainforest and other natural habitats and eradicated a large variety of local species over the past 100 years. The Amazon present was our colonial past.

What better contribution can we make to the worldwide environment than to look at how we can preserve and perhaps, in a small way, restore our own local natural environment?

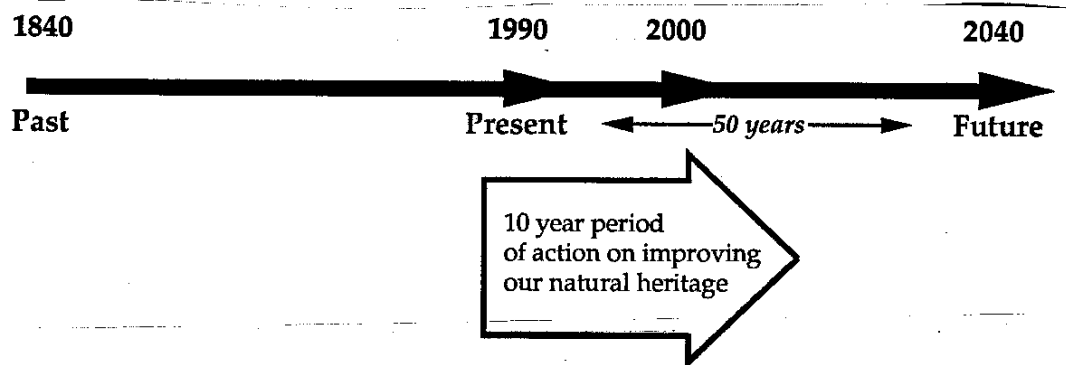
We may not be able to bring back the giant rata and rimu, the huia or the saddleback to Wellington but we may just be able to lure back the bellbird and whitehead, the wood pigeon and the robin and greatly increase the numbers of tui, moreporks and fantails.

By doing this, we enhance our own lives and lifestyles and, above all, we will ensure we hand on these natural treasures to our children and grandchildren in a better state than when we received them. That in itself makes it worth doing.

Many of the concepts in this plan have already been raised in other forums and by other people (such as the Wellington City Council's 'Towards 2000' conference). What this plan attempts to do is to bring together and add to these many good ideas and pull it all together into a coherent whole.

How this Plan is Set Out

The plan attempts to trace a pathway like this:

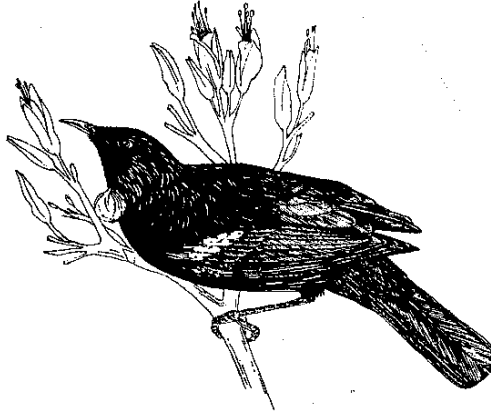


It spends some considerable time in setting the scene and providing background information. This is because we believe people need to be informed before they can judge whether or not the issue is worthy of the time and effort it will require.

Reader Alert!

In this document we present many assumptions about Wellington's ecological past. Because of poor historical records much of this is based on subjective assessment and speculation rather than known facts, but, as far as possible, we have tried to be as scientifically accurate as our current knowledge permits.

2 Our Mission



A mission is a long term goal or aim. Our project needs a mission to point it clearly in the right direction. So, what exactly are we looking to achieve in the long run?

Our mission is:

- **the preservation and improvement of the natural ecosystems and the native plant and animal species of the Wellington City area**

and

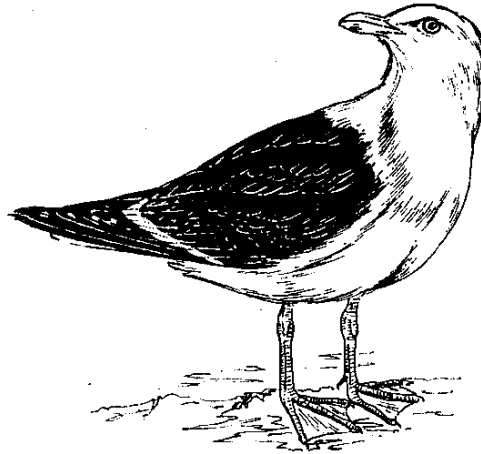
- **to bring the native birds back to Wellington.**

Regeneration of New Zealand's natural ecosystems is a slow process - it takes a hundred years to grow a sizeable rimu tree. So, we must take a long term perspective. We must look far into the future and span whole generations. We will begin by taking a 50 year aspect to our vision.

We will cover only the Wellington City area. This includes Ngauranga, Newlands, Johnsonville, Ohariu Valley and the whole Te Rawhiti/South Coast area. It doesn't include Tawa, Porirua, or the Hutt Valley areas. (Those are covered by other Forest & Bird branches.)

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Who will Benefit?



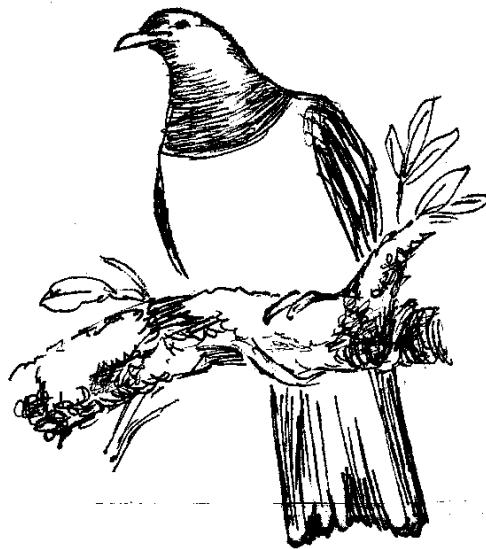
There will be many beneficiaries from our venture.

- New Zealand as a whole will benefit - especially if Wellington takes a lead and sets a positive example for others to follow.
- All the present citizens of Wellington will benefit from an improved lifestyle, landscape and environment. It will make Wellington a better place in which to live by providing places of beauty and interest to see and enjoy on our doorstep. It will also enable us to be secure in the knowledge that we did the right things for future generations.
- The city will also benefit from a highly attractive and improved 'outer town belt' with all the attendant recreational value that will provide.
- There will be tremendous potential for additional walkways and other low impact recreational activities very close to the city (a major plus with the increasing cost of transport).
- Visitors to Wellington will benefit by having places to see and visit that were representative of the original Wellington (well almost!) It will greatly improve the landscape value and appearance of Wellington City. Wellington has the potential to be a 'rainforest city' because of its topography and location.
- Future generations will benefit by having their heritage preserved for their enjoyment and appreciation.

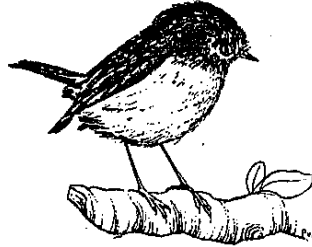
- There will also be benefits in satisfying a current need amongst people to 'do something for the environment'. Many people are anxious about ecological issues and want to make an active contribution.
- The plants and animals themselves will benefit by having places to live and perpetuate their species instead of being abused and destroyed.

Indeed, in some small way our own survival is affected by this. By moving too far away from nature in the last few hundred years we have placed our very existence at risk. Ventures such as this will remind us of the natural world and improve our relationship to it. It will help us live in harmony with nature rather than viewing it as a threat, a nuisance or a resource to be exploited.

In addition, it will not entail a major economic commitment. We believe that environmental goals can work in harmony with economic goals and social goals. For instance, most of the significant ecological sites in Wellington are in areas unsuitable for housing or where the land use value is low. (Wellington has a lot of this type of land!) Many are already zoned as 'open space'.



4 What are our Natural Treasures?



To get a clear picture of our plan it is important to know something about what New Zealand's (and Wellington's) natural treasures are. What are they made up of?

The natural treasures we speak of are the original ecosystems and habitats that existed in the Wellington City district prior to Maori and European settlement. Broadly, these would have included **coastline, scrub, forest of various types, wetlands, streams, grass and herb lands**. Other ecosystems such as **lakes, rivers and alpine** are not representative of the Wellington City area.

Coastline

This includes the immediate sea area, beaches, rocky shore, cliffs and scree slopes and tidal estuaries inland for about 1 kilometre. It includes islands and rock stacks. Coastal environments are rich in animal life and include many species of fish, crustaceans, molluscs, animals, birds and a large variety of plants.

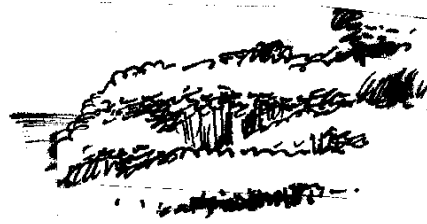


The plant communities can range from marine plants such as **kelp and seaweeds** to coastal grasses and shrubs such as **pingao and olearia**. Marine mammals such as **seals** can be seen on the coastline and it is home to the majority of New Zealand's bird species. **Gulls** are common and **penguins, terns and dotterels** are other examples of coastal birds.

Wellington has about 85kms of coastline. While the marine environment and bird life is not as rich as other coastal areas such as the north east of New Zealand, it is still a very worthwhile and diverse natural environment indeed.

Scrubland

This is an often undervalued ecosystem and is usually dismissed as 'rubbish' and ruthlessly eradicated. Scrubland can generally be regarded as woody plants under 3m in height. It can be **permanent scrub** such as in exposed areas or harsh environments or **progressive scrub** where nursery species are providing shelter for emerging trees.



Both types should have far more value placed on them than is currently the case. In particular, **progressive scrub** communities should be regarded as forests of the future ('baby bush' if you like!). Unless progressive scrub is protected forests will not be able to develop. Common scrub species include **manuka**, **tauhinu**, **hebes**, **taupata** and other **coprosma** species. It can also include some unusual species such as the divaricating shrubs, i.e. shrubs that are highly branched and with their leaves inside the bare outer branches.

Progressive scrub often includes many nursery species, plants that provide shelter for future forest giants to grow. These shelter trees can, themselves, grow quite tall in many instances. Common trees in progressive scrub communities are **fivefinger**, **rangiora**, various **pittosporum** species, **mahoe** and **karamu**.

Forest

Forest can generally be regarded as woody tree associations with a canopy over 3m in height. The high canopy of some primeval forests can reach up to 50m. New Zealand forests are **temperate rainforests** and generally fall into 3 broad categories. These are **broadleaf**, **podocarp** and **beech**.



Typical common **broadleaf** forest species are **kamahi**, **tawa**, **rata**, **karaka** and **rewarewa**.

Common **podocarp** forest species include the great forest giants - **totara**, **rimu**, **matai**, **kahikatea** and **miro**.

Beech forest includes **silver**, **black**, **red**, **mountain** and **hard beech**.

These forest types can occur in almost pure stands or as a mosaic of different types. Diversity is the hallmark of the New Zealand forest and they commonly contain a great variety of species.

New Zealand forests are typically layered with a high canopy, a mid canopy and an **understory** consisting largely of ferns and mosses. A healthy forest will have a good mixture of these layers with strong seedling presence.

Forest can also be classified into climatic zones. These are generally **coastal, lowland, montane and sub alpine**. Typical coastal trees are **ngaio, karaka, nikau and kohekohe**. A good example of typical Wellington coastal broadleaf forest is the **Hemi Matenga Reserve** at Waikanae. The majority of pre-European forest in the Wellington City area would have been coastal broadleaf forest.

Lowland forest tends to be largely **broadleaf or podocarp**. At **montane and sub alpine** levels **beech** tends to dominate. There are still a few good examples of **lowland forest** in the Hutt Valley area and the Tararua and Rimutaka Ranges contain much beech forest. **Beech forest** was not present in the Wellington City area at the time of human settlement.

The forest is home to the second largest group of **native birds** after seabirds. Typical forest species are **tui, bellbirds, wood pigeons, moreporks** and the smaller birds such as the **whiteheads, tits and robins**. **Kiwi** are also birds of the forest but, strangely, have not been present in the entire Wellington region since early European times though common in other areas.

Wetlands

Wetlands are low lying areas where the water table is high all year round and include **freshwater swamps, saltmarsh, alpine bogs and streams**.

Wetlands are rich areas biologically and have been seriously undervalued in the past. New Zealand once had vast wetland areas but now over 95% has been drained and lost. Good examples of wetlands in the Wellington region are **Taupo Swamp and Pauatahanui Inlet**.



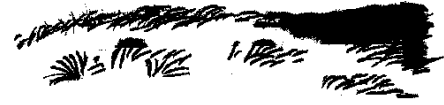
Typical wetland plants are **flax, toitoi, cabbage tree, kahikatea, raupo and sedges**.

Typical wetland birds include **pukeko, herons, kingfisher and ducks**.

Swamps can also support forest. These **swamp forests** were once common but now are extremely rare in the North Island. They are still present in South Westland however. They contain such water tolerant tree species as **kahikatea, cabbage trees and pukatea**.

Grasslands, Herbfields and Mosslands

These are also seriously under-valued ecosystems and are often replaced with exotic pasture grasses or grazed for farming.

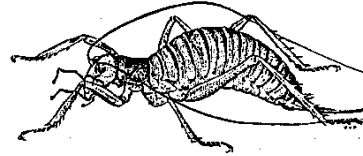


Native grasslands include tussock grasses such as hard tussock, snow tussock, silver tussock and blue tussock and the carex grasses.

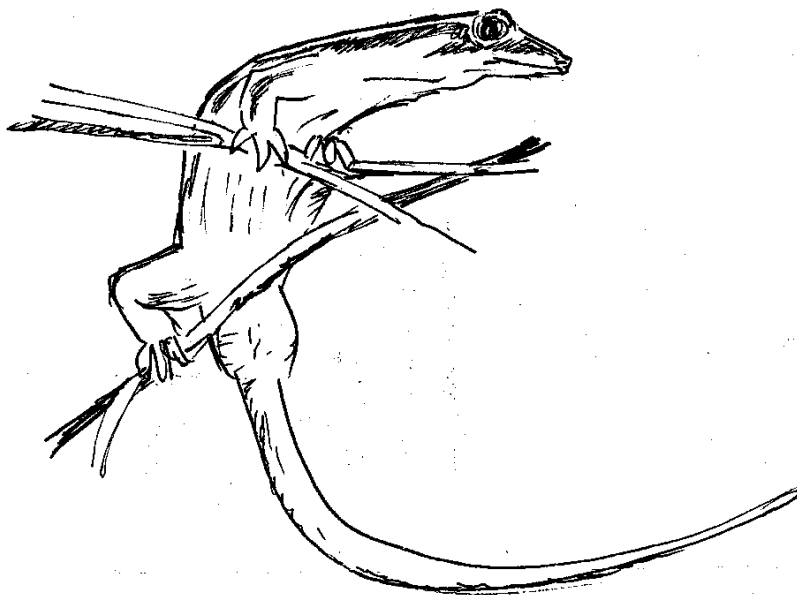
Herbfields consist of low ground cover which are not grass. These areas often occur in coastal or subalpine areas, usually where the soils are poor or they are sufficiently exposed or of such high altitude as to prevent growth of scrub and forest. Grasslands and herbfields harbour birds such as the pipit and good insect life.

The Forgotten Fauna and Flora

Birds and forests tend to be the most obvious and glamorous of our native animal species and ecosystems. However there are many other native animal and plant types living in these ecosystems that the majority of people seldom give a second look at, except to catch or kill them for fun.



These animals include the likes of **skinks** and **geckos**, insects such as **weta** and **weevils**, freshwater animals such as **kokopu** and **crayfish** and many other often unique and rare animals. Many of these species are under serious threat and are most definitely seriously undervalued. Some undervalued and rare plants of the Wellington region include **leafless clematis** and **adder's tongue**.



5

Threats to the Treasures



There are so many threats to these ecosystems, many of them potentially catastrophic or fatal, that it can make quite depressing reading. However, in any long term view of our natural treasures, threats must be part of the equation simply because they can prevent the achievement of our mission.

People are probably the major threat to the ecosystems. Certainly this has been so in the past as humans have been directly responsible for the vast destruction of habitats in Wellington.

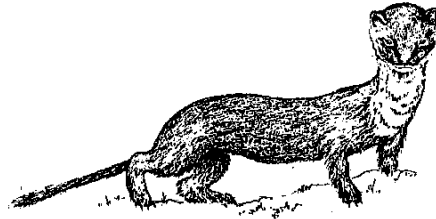


Farming and grazing, pine planting, burning and clearing, subdivision, dumping of rubbish, pollution, the keeping of cats and dogs and overuse and abuse of reserves are the chief problems in a very long list. Plain ignorance of, and undervaluing of, natural systems is the basic cause of the problem.

Exotic plants are also a major threat. Invasive weeds are a big problem in Wellington and include such things as **barberry, wandering willy** and the dreaded **old man's beard**.

While gorse is a considerable nuisance to agriculture, it does have some value as nursery cover for native plants. However, it is prone to fire, so gorseland with regenerating native scrub must be buffered from urban and suburban development if the young native forest is to be given a chance to grow through the gorse in 20-30 years.

Introduced animals are also a major problem. **Possums** seriously threaten all of New Zealand's forests, and **goats, sheep and cattle** also do terrible damage to both undergrowth and trees.



Rats, stoats, ferrets, domestic and wild cats and magpies pose serious problems for bird life.

Another threat often disregarded is the **isolation of ecosystems**. Small patches of bush far from other bush areas cannot sustain bird life of any variety and over long periods of time will decline. Many native plants depend on birds to spread their seed and aid their reproduction. Lack of birdlife is one reason for the very slow regeneration of local forest and the absence of certain plant species.

Ecosystems need to be linked together as much as possible to maintain their long term viability.

Another problem, particularly in maintaining viable bird and animal populations, is the presence of **suitable food sources**. For instance, **wood pigeons** can only live in areas that contain species that they can feed on such as **miro, kohekohe, totara, nikau**, etc. The honeyeaters such as **bellbirds** and **tui** will only thrive in areas with flowering plants and insects. Moreover, food sources must be available all year round which means a variety of plants, not just a few species as is currently the case.

Food sources for birds is a major argument against planting pine trees for anything other than purely commercial reasons. Pine plantations, even with a native understory, are comparatively poor food sources for native birds.

Even many regenerating and existing native bush areas lack the diverse range of food sources for native birds. For instance, three tree species that are top of the list for birds are **miro, nikau** and **kahikatea**. These plants are now very rare in Wellington.

Eliminating these threats is the essential quality aspect of our plan. It is no use having large ecosystems ravaged by noxious plants and animals and lacking birdlife. The three key themes of threat control, linkage and enhancement with prime bird food species will be a major focus of this plan.

6

The Way it Was



There were no comprehensive botanical or wildlife surveys done of the Wellington City area in the early days of European settlement. Such things were low on the list of priorities for pioneers who stared at the intractable swathes of native bush and saw a useless obstacle that had to be defeated to make way for homes and farms. Consequently, we know only snatches of detail about the pre-European ecosystems of the Wellington City area and, therefore, have to resort to constructing a view from the little we know, the little that is left and what is typical of the region in general.

The Wellington City area covers approximately 310 square kilometres, i.e. roughly 31,000 hectares.

The majority of this area (possibly as much as 60%) was **coastal broadleaf rain forest** dominated by **kohekohe** (New Zealand Mahogany). Other common plants in this forest, especially near the coast, were **karaka**, **nikau** and **ngaio**. Intermixed with these species, in reasonable numbers, were the common broadleaf species - **rata**, **tawa**, **rewarewa** and others. There is evidence that many podocarps, such as **kahikatea**, **rimu**, etc., were sprinkled throughout, even quite close to the coast and on high ridges.

About 30% of the area consisted of mixed lowland **broadleaf/podocarp** forest with smaller areas dominated by nearly pure stands of podocarp. These areas, in sheltered valleys and hillsides, had spectacular stands of **rata**, **rimu**, **totara**, **miro** and **matai** piercing the canopy - stands as dense and of a quality equal to any in the lower North Island.

As much as 5% of the area, on the low valley floors such as Makara Valley, parts of Karori and Ohariu Valley, was pure swamp forest with stands of giant kahikatea, rimu and pukatea festooned with moss and epiphytes and interspersed with dense stands of cabbage trees and thickets of flax, raupo and toitoi in the soggiest sections.

Around the Makara, Wellington Central area and Rongotai in particular there were extensive tracts of saltmarsh full of sedge and reeds, possible as much as 2% of the total area. (Some of this was naturally drained by the 1855 earthquake.)

The remaining 3% was probably permanent low coastal scrubland, especially in very exposed coastal slopes and high ridgetops on the south coast and possible the Miramar peninsula. A little of this would have been herb and grassland in the most extreme cliffs and scree slopes areas such as around Hawkins Hill.

The forest would have been almost unrecognisable to modern bushwalkers. It was far thicker than modern bush, with a huge variety of species. In some places this bush was almost impenetrable. A day's tramp would have entailed slashing your way a maximum of 5 to 6 kilometres through virtual jungle and bore no comparison to today's much more open forest - severely denuded by browsing animals.

Only on Kapiti Island in the Wellington region (and then only since the possums were eradicated recently) can something like the original forest be seen now. Even that forest is mainly very young forest compared to the ancient rainforest of the Wellington peninsula.

These forests teemed with bird and animal life. Birds were present at the rate of thousands per hectare and the dawn chorus would have been deafening. Pigeons flocked in the kohekohe and miro trees. Tui, bellbirds and kokako chimed in the treetops. Saddlebacks and the mystical huia called in the bush. Whitehead, robins, tits and other small birds flitted around the forest floor and the mid canopy. Kaka and parakeets would have been abundant.

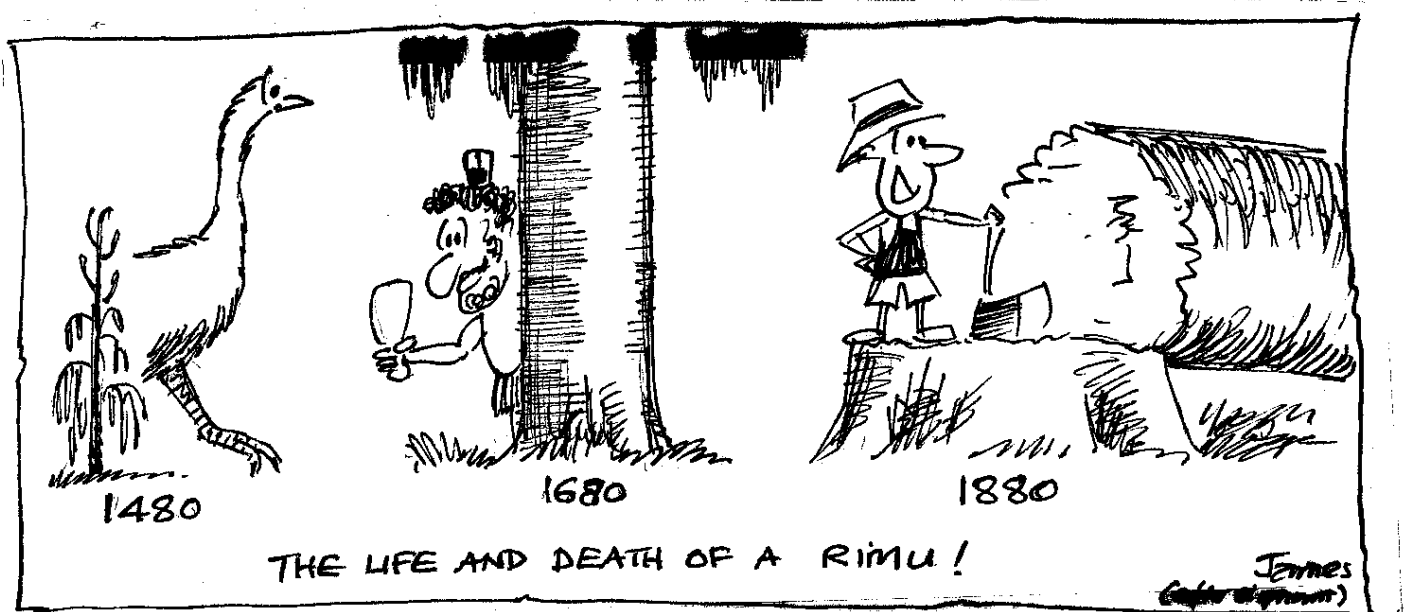
The forest crawled with small fry. Skinks, geckos, wetas and many other small animals swarmed on the forest floor and in the lower reaches of the forest.

The coast and swamps teemed with waterbirds and seabirds. Fur seals by the thousand clustered around a coastline teeming with incalculable quantities of fish. Whales were readily seen blowing offshore.

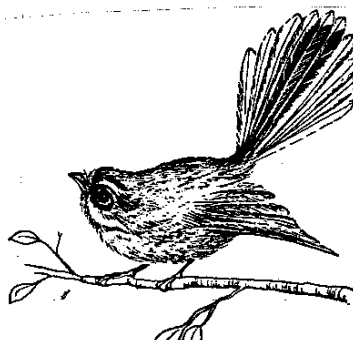
The Maori had only small impact on this pristine landscape. Fires spoiled some areas, particularly near the coast and on the Miramar Peninsular, and they kept small garden areas. Hunting may have reduced significantly the numbers of some birds, such as the huia. However, the impact of Maori in Wellington was minor compared to the holocaust to come and the majority of the region's Maori population were located in the even richer Porirua and Hutt valleys with their better soils and marine food sources.

From perhaps 1800 on considerable damage was done to the wildlife by rats which escaped from ships. Then the European arrived to settle in Wellington in 1840. Within 50 years the forest was practically gone. Clearance of land by fire for farming and settlement was the order of the day and accidental burning and clearance for firewood and timber took out what little remained. The swamps were all drained. The saltmarsh reclaimed. By 1920 it had virtually all gone. 99.5% of the original forest cover had disappeared. Even reserves such as the town belt had lost their magnificent forests. The rats and stoats devastated the bird life, one step ahead of the raging fires and the flailing axes.

No-one can dispute the need for homes and farms. People cannot live in forests and the priorities of the pioneers were very different to ours. Even so, it would have been nice if they had left a block or two for future generations to enjoy and 99.5% represents quite a comprehensive clearance! However, it is no use blaming our forebears and lamenting what is lost. But, it is some use looking to see if we can restore some of that lost world.



7 The Way it is



Some quick facts. The Wellington City area contained, or does contain*, the following:

	Past c. 1800 (est.)	Present* c. 1988
•low modified coastline and cliffs (i.e. coastline without main roads, residential or commercial development)	85km	Approx 50km
•permanent native scrubland, native grassland and herbfields	750ha	Only very small isolated areas.
•mature rainforest		
- coastal and lowland broad leaf	17500ha	120ha
- broad leaf/podocarp	10000ha	13ha
- swamp forest	1000ha	Nil
•progressive scrub (with young trees)	patches in areas damaged by storm and fire	1300ha
•young scrub		1750ha
•wetlands		
- freshwater swamps	500ha	10ha
- coastal saltmarsh	750ha	10ha
•native bird species	forest	8† (3 in very low numbers.)
	sea and shore	Reasonable number of seabirds for the area.
•overall quality of forest and scrub areas	pristine	poor

*Source - Wellington Regional Council Vegetation Survey

†Forest birds present in the Wellington area are tui, grey warbler, fantail, morepork, silvereye, kingfisher, shining cuckoo and wood pigeon (only 2 or 3 pairs).

Since the middle of this century some areas of ecological significance, particularly around the Wellington urban area, have been very slowly making an unobtrusive comeback. Approximately one third of these areas are under official reserve status. Their condition varies but generally they are all modified to a significant degree by threats (some severely, with possum damage a real problem) and lack species diversity. Many plants and birds are present only in extremely low numbers (nikau and miro and wood pigeons and tui for instance). Food sources for native birds are generally very poor, especially winter food sources.

Isolation of forest areas is a major problem, both for the future presence of birds and the healthy regeneration of the forest. Most forest areas are separated from each other by housing, highways and pasture.

Large areas of low modified coastline remain, but these are largely in remote or inaccessible areas and much is unprotected and under threat.

Significant Sites

In preparing this plan we set out to identify the sites in the Wellington area that were considered to be of significant ecological value. Working criteria for 'significant' were devised. It is recognised that such criteria are wide open to challenge on any number of grounds. However, this definition at least represents both a starting point for what we hope is a wider ongoing debate on the subject and Forest & Bird's opinion on the matter. For the purposes of our survey, sites were considered to be significant if they:

- contained native vegetation (permanent scrub, progressive scrub, forest, grasslands, etc) over approx 10ha in size.
- contained any size of wetland.
- contained outstanding examples of coastline over 5kms in length

or if under 10ha in size and 5kms in length they:

- have outstanding landscape value
- have unusual or unique species value for the area (vegetation or animal)
- can actually or potentially connect with other areas to form contiguous tracts or 'bird corridors'.
- can assist in the preservation of the Kaiwharawhara Stream
- are an isolated remnant representative of the area
- have a significant breeding or other biological value (e.g. seal haul outs, nesting sites, etc.)

It was recognised that in all practicality not every small area of bush could be located and acted upon at this stage. The Wellington urban area in particular contains many small patches (under 10ha) of regenerating bush - much of it on private property. While these are not included in the listing, we still wish to see them treasured and secured if possible and they may be added to the list at a later stage.

Thirty-seven sites of significance have been identified in the first discussion. These are included as Appendix A. Each is numbered for location on the map (Appendix B), named and described. The reasons for significance are given, the site's general condition is provided, major threats are identified and ownership and protection status identified where known. Recommendations for protection are given if current protection is considered inadequate for the long term security of the site. Not a lot is known about the details of many of these sites and most, if not all, of them need comprehensive surveys.

At the time this listing was drafted very little was known of the south west coast and Ohariu areas. Aerial mapping does not reveal any further major tracts of vegetation. However, these areas badly need a comprehensive biological survey to identify exactly what is in them.

Protection Status

There are four types of protection status that may be applied to the sites. Our ultimate goal as we shall see, is to have all the significant sites under one of these classes of protection status.

These classes are:

- **Department of Conservation Estate**

This is the ideal status. Either as Wildlife or Botanical reserve. These reserves are usually only created for the very highest priority sites of outstanding national or regional value.

Several coastal areas are already under Department of Conservation control as wildlife reserves.

- **Wellington City Council Reserve**
- **Wellington Regional Council Reserve**

These are also highly desirable. They are suitable for areas of highly valued local ecosystems. We expect that at least 80% of the significant sites would eventually be in this category. There are many local government reserves already but distinction needs to be drawn between reserves for **ecological protection** and reserves for other purposes such as public works and recreation.

- **Private Trust or Covenant**

These are still good options for smaller areas or for private land, but are less desirable as a long term option because they depend on the goodwill and management of individuals or small organisations over an extended period of time. Private trusts and covenants also need to be backed up with assistance for fencing, rate relief, pest control and planting.

QE II National Trust covenants are a most desirable form of protection but are limited to those that meet their criteria. Several of the sites identified (primarily those in critical 'linkage' areas) are zoned industrial and residential and include private homes and building. Some type of covenant with owners may be needed in these areas..

For the thirty-seven sites listed the following protection status situation applies.

Protection Status Type	No. of Sites per Status Type
1. Protected (only requires good management or improvement)	8
2. Mostly protected but areas need adding to them	5
3. Contain some protected area but mostly unprotected	5
4. Reserved but not for ecological reasons	2
5. Little or no protection or status unknown	17

As can be seen there are many sites that are under threat at this very moment.

People's Attitudes

The attitude of people towards the natural treasures is a vital part of preserving them. As we can see, a totally development/economic mindset by the early settlers led to wholesale devastation. Unless people adopt a positive view of their natural world, it cannot hope to survive.

Currently, attitudes towards the environment and nature are slowly changing from the ignorant/unconcerned/hostile towards the more supportive/appreciative/highly valued. The ideal for the long term safety of our natural resources is that all citizens highly value their natural treasures.

Even though there is a significant shift emerging there are still many negative attitudes that people hold that pose a serious threat. Some of these are:

The 'Exotics' Mentality

The last hundred years has seen the planting of exotic species such as birches, pines and gums become so embedded in our psyche that many are now almost incapable of thinking of planting anything else. Our forebears brought with them the plants and birds they were familiar with and the attitude of the local species being less desirable has persisted every since.

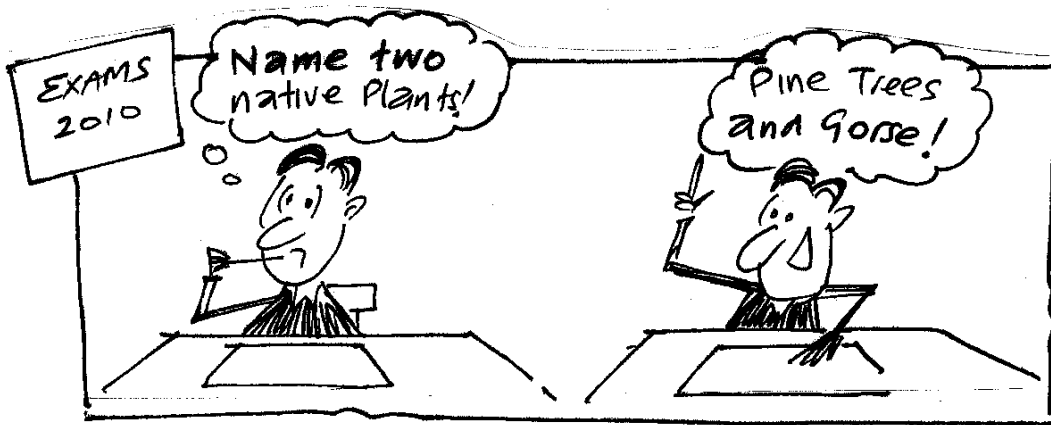
The advantages of planting native species are seldom known or considered by many corporate bodies and individuals. However, this attitude is now changing and fortunately the merits of local species are becoming increasingly recognised.

The 'Economic' Mentality

We still tend to measure much of what we do on the basis of economic factors rather than against an intrinsic or purely aesthetic value. If a subdivision is pitted against a patch of bush, then the subdivision will probably win. We are not against economic development. However, we believe that such development needs to be balanced against the loss of sometimes irreplaceable natural features.

Basic Ignorance

Many of us, and our children, have grown up without nature and the bush close to hand. To many, the status quo is the way it always was and the way it should stay. Many people are far more familiar with exotic plants and animals than they are with native species.

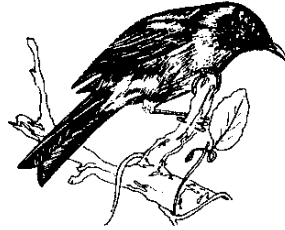


We tend to have little appreciation of the damage we do to the fragile ecosystems. When it comes to the 'forgotten fauna' of lizards, insects and inconspicuous plants, our ignorance is almost total.

In addition to locating and preserving our natural treasures, we also need to work on improving these basic attitudes.

8

The Way it Could Be



Let us try some quick crystal ball gazing. The Wellington City area could contain the following (if we act now to make it happen):

	Past (est.) c. 1800	Present c. 1990	Future c. 2040
• low modified coastline and cliffs	85km	50km	60km
• permanent native scrubland, native grassland and herbfields	750 ha	Only very small isolated areas	At least the same as now
• mature rain forest			
- coastal and lowland broadleaf	17500ha	120ha	Over 1000ha
- broadleaf/podocarp	10000ha	13ha	25ha
- swamp forest	1000ha	Nil	2ha partly restored
• progressive scrub (with young trees)	patches in areas damaged by storm and fire	1300ha	Over 2000ha
• young scrub		1750ha	Over 1500ha emerged from existing gorse cover and replanting
• wetlands			
- freshwater swamps	500ha	10ha	Existing areas reserved and enhanced
- coastal saltmarsh	750ha	10ha	

	Past (est.) c. 1800	Present c. 1990	Future c. 2040
•native bird species	Probably)over 200)species of)both types	8 (3 in small numbers)	15 species* in much greater numbers.
forest			
		A reasonable number of seabirds for the area	At least the same as now.
sea and shore			
•overall quality of forest and scrub areas	Pristine	Poor	Very good in protected areas.
•significant ecological sites under full protection	N/A	8 out of 36	All - perhaps up to 50 sites in number.
•people's attitudes towards their natural world	N/A	Some citizens highly value their natural world. Still much ignorance and negative attitudes	All citizens highly value their natural world.

*Species which may be able to be attracted back to Wellington, or released if conditions are right, include bellbird, red crowned parakeet, long-tailed cuckoo, whitehead, pied tit, robin and rifleman.

What this says is this:

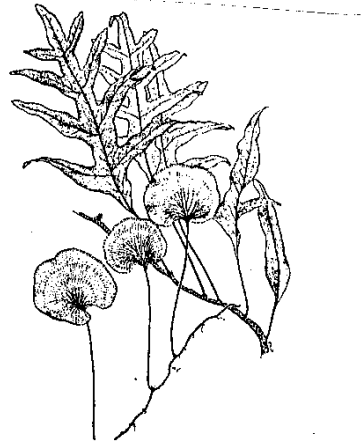
- We should look to add a little to our existing coastline ecosystems
- We should preserve at least our existing permanent scrublands and pre-European forests.
- If we look after them, large parts of existing regenerating forests will grow to maturity.
- Much progressive scrubland will mature into regenerating forest if we preserve it.
- More unproductive land, marginal land and gorse areas will move into the early progressive scrubland stage if we allow it to.
- We could look to restore at least one small area as a freshwater swamp specimen (including swamp forest) and still have our one area of coastal saltmarsh.

- By providing linked forest corridors, revegetating and overplanting with bird food sources and introducing better predator control, the birds will have increased substantially in variety and number in the forests and have more than held their own on the coasts. Reintroduction of some species may be necessary to achieve this.
- We will have looked after and preserved our significant ecological sites and added to them as new areas of significance are identified.
- People's attitudes toward their natural world will have significantly changed for the better.

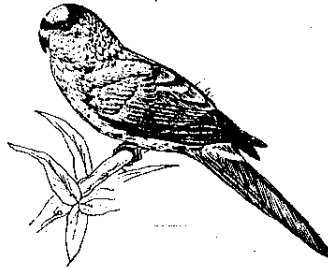
All of this is quite achievable on the timescale outlined. The highest risk area is to improve the birdlife in the forests as native birdlife is trending toward a decline across the nation as a whole. All we need is the vision and will to act to make it happen and give nature the opportunity and help to repair herself in her own way.

Wellington would be an exceptionally beautiful rainforest city. The hills clothed in tall native bush with birds singing and playing in the canopy. A place of true natural beauty for residents and visitors to enjoy. A wonderful natural complement to the city's vibrant cultural, business and recreational life.

And perhaps our children and grandchildren will appreciate the foresight of this generation who acted positively to hand it on to them in a better condition than they found it. Perhaps then we could look back and say we had achieved our mission.



9 How to Get There



Our vision is a long term view of the ideal - but it won't achieve itself. We need some shorter term objectives to set us on target to achieving our mission. Here are some specific objectives to move us down the track towards that goal.

Objective 1:

- DOC, WCC, WRC and the general public accept and support our plan and it has been incorporated in the district scheme. by Dec. 1991

Objective 2:

- All significant ecological sites are fully protected (i.e. they have Status 1) by 1995

Objective 3:

- The general public 'highly values' their natural treasures by 1995

Objective 4:

- A freshwater swamp specimen has been restored in the city area by 1995

Objective 5:

- All critical bird link areas have been fully replanted or overplanted in suitable bird food source species (preferably native) by 2000

Objective 6:

- All significant sites have been enhanced with effective threat control and are under permanent, high quality management by 2000

These objectives represent the conservation programme of the Wellington Branch of the Royal Forest & Bird Protection Society of New Zealand Inc. for the next 10 years. It is our intention to actively work for their achievement.

Fundamental Principles

The Wellington Branch of Forest and Bird cannot achieve these objectives without the support and assistance of others. In order to achieve them there are some fundamental principles that all organisations and people in the Wellington City area will need to adopt and follow as their guide to action over the next 50 years.

These principles are:

- Recognise that there are significant* ecological sites in the Wellington City area that need to be preserved and improved for posterity.

*Significant is defined as:

- contain native vegetation (permanent scrub, progressive scrub, forest, grasslands, etc) over approx 10ha in size.
- contain any size of wetland.
- contain outstanding examples of coastline over 5kms in length

or if under 10ha in size and 5kms in length they:

- have outstanding landscape value
- have unusual or unique species value for the area (vegetation or animal)
- can actually or potentially connect with other areas to form contiguous tracts or 'bird corridors'.
- can assist in the preservation of the Kaiwharawhara Stream
- are an isolated remnant representative of the area
- have a significant breeding or other biological value (e.g. seal haul outs, nesting sites, etc.)

- These significant ecological sites should be given full protection status primarily, but not necessarily exclusively, for their ecological value (as distinct from reserving for other values, such as public works or recreation).
- Protection primarily for ecological value would mean that protection and enhancement of the ecosystems would have priority and would exclude economic use. Passive recreational use would be permitted in these areas.
- These sites should be linked together as much as possible to form contiguous tracts and bird corridors.
- The planting of trees and shrubs in or near significant ecological sites should be in favour of native nursery plants and native plants favoured by native birds as food sources (see Appendix C for a list of native plants endemic to the Wellington area and suitable for these purposes.)
- Planting should primarily be of plants originally found in the Wellington area.

These principles can be adopted by councils, societies, corporate bodies and individuals.

Contribution

Various organisations and individuals have different contributions to make at their different levels in order to ensure the objectives are achieved. Let's look at some of those possible contributions.

Environmental Groups

Examples: Forest and Bird, Botanical Society, Ornithological Society, etc.

- Adopt and follow this plan and its principles.
- Actively work for its achievement.
- Supply labour and funds to major projects such as replanting, land purchase, etc.
- Provide education opportunities to organisations and individuals.

Civic Bodies

Examples: Wellington City Council, Wellington Regional Council

- Adopt and follow this plan and its principles.
- Incorporate it in the district and regional schemes.
- Supply high quality management of ecological reserves in as many cases as necessary.
- Ensure economic and service delivery policies do not clash with this plan and its principles. e.g. waste disposal, urban transport, subdivision, recreation, etc.
- Materially and actively assist the revegetation and overplanting of sites and the control of threats.
- Procure unprotected sites where possible.

Corporate Bodies

Examples: S.O.E's, Government Departments, large and small businesses.

- Adopt and follow this plan and its principles.
- Preserve and plant native plants on any land they own.
- Adopt working policies for businesses which will not threaten any significant ecological sites or the natural environment in general.
- Contribute funds and resources to special projects supporting this plan (e.g. replanting projects, land purchase, etc.)

Other Organisations

Examples: Residents Associations, Schools, Churches, Trusts, Sports Clubs, other clubs and societies.

- Adopt and follow this plan and its principles.
- Preserve and plant native plants on any land you own.
- Contribute support, finance and labour to any special projects supporting this plan.
- Help to reduce the threats to ecological sites.

Individuals

- Adopt and follow this plan and its principles.
- Join environmental groups who support this plan.
- Learn more about natural ecosystems.
- Express support for those principles to elected officials who have influence over the plan.
- Look after and respect the significant ecological sites.
- Preserve and plant native plants on any land you own.
- Volunteer for any special projects that support this plan.

10 Broad Action Plan and Timetable



Here is a broad outline of the steps needed to achieve these objectives. This is the Wellington Branch of Forest & Bird's action plan for the next 10 years.

	Actions	Dates
1. <div style="border: 1px solid black; padding: 5px; width: fit-content;">Initiate discussion on the plan</div>	<ul style="list-style-type: none"> • Conduct a publicity campaign with members and the public. • Discuss with DOC, WCC & WRC and other interested parties. 	Begin December, 1990
2. <div style="border: 1px solid black; padding: 5px; width: fit-content;">Refine list of sites</div>	<ul style="list-style-type: none"> • Clarify boundaries and protection status. • Conduct surveys of sites. • Identify other sites. 	Begin January, 1991
3. <div style="border: 1px solid black; padding: 5px; width: fit-content;">Act on urgent priorities</div>	<ul style="list-style-type: none"> • Identify sites under immediate threat. • Initiate action to protect these. 	Some under action now. Further work from January, 1991
4. <div style="border: 1px solid black; padding: 5px; width: fit-content;">Win broad support and approval</div>	<ul style="list-style-type: none"> • Identify areas of difference. • Resolve each in turn. • Finalise agreed plan and policies. • Incorporate in district scheme. 	Complete December, 1991
5. <div style="border: 1px solid black; padding: 5px; width: fit-content;">Establish a 'Natural Heritage Restoration Trust'</div>	<ul style="list-style-type: none"> • Establish a charter • Set up Trust. • Develop funding and capital base. • Set up working structure. • Assist and oversee restoration of ecological sites. 	Begin 1991 Wind up c 2000

		Actions	Dates
6.	Follow through implementation of district scheme and preservation of sites	<ul style="list-style-type: none"> • Monitor progress of district scheme. • Prioritise agreed significant ecological sites. • Follow through on each to obtain appropriate protection status. 	Begin January, 1992 Complete c 1995
7.	Conduct public education campaign	<ul style="list-style-type: none"> • Widen publicity. • Hold seminars and discussions with key groups. • Recruit individuals and groups to the cause. 	Begin January, 1992 Complete December, 1993
8.	Arrange swamp restoration	<ul style="list-style-type: none"> • Select suitable site. • Initiate project. • Follow through on implementation. 	Begin c. 1992 Complete c. 1995
9.	Initiate replanting programmes	<ul style="list-style-type: none"> • Resolve supply/funding difficulties. • Identify priorities/objectives. • Follow through year by year in association with councils. 	Begin January, 1993 Complete c. 1995

Immediate Priorities

Included in the list of significant ecological sites are some that are under immediate threat of either destruction or damage. The highest priority sites for action are:

Site:

• Site 27 - Spooky Gully/South Coast

• Site 28 - Lower Long Gully

• Site 7 - Strips either side of, and land adjoining Huntleigh Park

Threat:

• Economic use (pine planting/quarrying/rubbish disposal).

• Private land currently for sale.

• Proposed subdivisions.

Urgent attention will be given to these sites.

The Natural Heritage Restoration Trust

It would be desirable to establish early in the project a trust whose mission would be to revegetate the ecological sites. This job alone will be a large and long term one and it is considered it would be most effectively done by an independent organisation, funded by all interested parties, that had this project as its sole function. The trust would, effectively, be a partnership between environmental groups, civic and corporate bodies, other organisations and individuals. Establishing such a trust would ensure continuity until the job was done. Services supplied by the Trust could include a nursery to supply plants, oversight and co-ordination of planting out of plants, education of the public and restoration of a swamp area.

11 Resource Implications

A plan such as this will, of course, have resourcing implications. In this section we attempt to identify some of those and identify options to cope with them.

Resourcing Needs

Objective 1:

- Time and effort by Forest & Bird

Objective 2:

- Possible acquisition of land in some cases.
- Increased management costs of new reserves.

Objective 3:

- Time and effort by Forest and Bird.

Objective 4:

- Purchase of land
- Replanting and landscaping

Objective 3 and 5:

- Funding of the 'Natural Heritage Restoration Trust' to provide a capital base.

Objectives 5 and 6:

- Plants
- Labour and management costs.
- Pest control, fencing and rate relief.

Resourcing Options

- Membership assistance.

- Regional land acquisition funds.
- Reserve funds.
- Increased Parks and Reserves budget.

- Membership assistance.
- Grants from private trusts and funding agencies.

- Grants, donations and public subscriptions to the Trust.

- Contribution from councils.
- Contribution from corporate and other sponsors.
- Public donation and subscription.

- Grants, donations, public subscriptions to the Trust augmented by WCC and WRC funding.
- Management by WCC and WRC.
- Labour from volunteer organisations and individuals.
- PD and unemployed schemes.

12 Conclusion



This plan is submitted for public debate and as a starting point to an exercise we believe is fundamental to one of the most basic and important issues confronting humankind at the present time - the global environment. It is our response to these issues in our area of particular concern, in our particular district. We hope the response will be positive and that it will provide a practical and coherent way to identify where we have come from, where we are going and how to get there on a two hundred year continuum. We expect many areas to be challenged and hopefully improvement rather than rejection will come from those challenges. We believe rejection of the fundamental spirit of the plan will be a dark signal for our city, nation and the world. However, we confidently expect a positive response. We believe the time is right for a move of this nature. It is an idea whose time has come.

13 Credits

The following people have assisted in the preparation of this plan:

James Lynch
Colin Ryder
Tony Beauchamp
Maggy Wassilieff
Bill van Gorkom
Evelynne Lynch
Jeff Sheerin
Chris Mathieson
Fiona Wilson
Wellington Regional Council
Wellington City Council

Special thanks to Tony Beauchamp for the original concept of 'bird corridors' in Wellington city and for his contribution to identifying the significant ecological sites.

List of Significant Ecological Sites - Wellington City Area

Site No.	Site Name	Approx Area (ha)	Site Description	Reasons for Significance	Condition of Site	Threats	Ownership	Protection Status
1	Ngauranga to Petone cliffs	150ha	Mixed regenerating coastal forest	<ul style="list-style-type: none"> regionally rare plants bird corridor link visual backdrop walkway potential 	<ul style="list-style-type: none"> varies possum damage gorse grazing in places 	<ul style="list-style-type: none"> grazing subdivision fire 	Mostly private. Some council reserve.	<p>Status 3</p> <ul style="list-style-type: none"> Approx 20ha Gilbert Bush Reserve. Remainder unknown and needs preserving.
2	West of Ngauranga Gorge	40ha	Pines Bare ground Mixed regenerating coastal forest	<ul style="list-style-type: none"> vital future link for bird corridor (Currently the weakest link) 	<ul style="list-style-type: none"> bare ground pine trees 	<ul style="list-style-type: none"> further pine planting industrial use subdivision 	Some council reserve.	<p>Status 3</p> <ul style="list-style-type: none"> Homebush Park and Tyers Stream is reserved. Remainder none and needs preserving.
3	Kaiwharawhara hillsides	50ha	Urban/mixed regenerating coastal forest	<ul style="list-style-type: none"> vital link for bird corridor. visual backdrop 	<ul style="list-style-type: none"> good, but further revegetation required. much is residential/recreational development 	<ul style="list-style-type: none"> further subdivision fire 	Mixture of private/WCC	<p>Status 5</p> <ul style="list-style-type: none"> Some areas reserved as playing fields. Needs overall protection.
4	North/East of Ngaio Gorge/water tanks	50ha	Urban/mixed regenerating coastal forest and scrub.	<ul style="list-style-type: none"> vital bird corridor link good regeneration and potential 	<ul style="list-style-type: none"> unknown needs surveying 	<ul style="list-style-type: none"> further development weeds 	Some WCC reserve. Some private.	<p>Status 3</p> <ul style="list-style-type: none"> 2 reserves (approx 10ha) Balance private and needs preserving.

Significant Ecological Sites - Wellington City Area (cont...)

Site No.	Site Name	Approx Area (ha)	Site Description	Reasons for Significance	Condition of Site	Threats	Ownership	Protection Status
5	Ngairo Gorge	40ha	Mixed regenerating coastal forest/original remnant	<ul style="list-style-type: none"> historical (one of the last sites for kokako/saddleback) stream preservation good regenerative potential diverse species bird corridor link 	<ul style="list-style-type: none"> some areas good others rough includes some gorse some weeds recent old man's beard clearance. 	<ul style="list-style-type: none"> fire dumping reinvansion by weeds industrial encroachment at lower end 	Wgtn City Council. Some private?	Status 3 <ul style="list-style-type: none"> Includes Tresslick Park (18ha) Lower end unknown Needs preserving.
6	Crofton Substation Block	50ha	Gorse and regenerating progressive scrub	<ul style="list-style-type: none"> vital bird corridor link to Wilton Bush good regeneration potential 	<ul style="list-style-type: none"> heavy weed infestation (gorse and barberry) some pine planting 	<ul style="list-style-type: none"> fire alternative use (e.g. pine plantation) 	Electricorp?	Status 5 <ul style="list-style-type: none"> Zoned open space Needs preserving
7	Strips either side of Huntleigh Park	20ha	Pasture and exotic/native scrub	<ul style="list-style-type: none"> vital bird corridor links for Huntleigh Park and Khandallah Park 	<ul style="list-style-type: none"> poor very little native vegetation 	<ul style="list-style-type: none"> subdivision 	Private	Status 5 <ul style="list-style-type: none"> None Needs preserving
8	Huntleigh Park	40ha	Pre-European mixed broad leaf/podocarp forest	<ul style="list-style-type: none"> one of few pre-European forests in city area. contains regionally rare ancient trees 	<ul style="list-style-type: none"> excellent 	<ul style="list-style-type: none"> subdivisions on edges 	Majority WCC Some private	Status 2 <ul style="list-style-type: none"> Reserve (30ha Huntleigh Park) Pieces around the edges need to be added to the reserve.
9	Gorge west of Khandallah Park (Fox St ext and above)	200ha	Regenerating scrub and broad leaf forest	<ul style="list-style-type: none"> scenic value botanical value good bird life regenerative potential 	<ul style="list-style-type: none"> good condition some grazing on top of ridges 	<ul style="list-style-type: none"> grazing subdivision overuse 	Unknown. Possibly private	Status 5 <ul style="list-style-type: none"> No protection but zoned open space. Ideal to add to Khandallah/Johnsonville parks

Significant Ecological Sites - Wellington City Area (cont...)

Site No.	Site Name	Approx Area (ha)	Site Description	Reasons for Significance	Condition of Site	Threats	Ownership	Protection Status
10	Johnsonville/Khandallah Parks	150ha	Mature and regenerating mixed coastal/broad leaf forest and scrub. Pasture and gorse in Johnsonville Park.	<ul style="list-style-type: none"> • good species representation and diversity • part of Nthn Walkway • further regenerative potential in Johnsonville Park • scenic backdrop 	<ul style="list-style-type: none"> • possums • gorse • some pine plantings • grazing 	<ul style="list-style-type: none"> • fire • possums • overuse by public • grazing 	WCC	Status 1 <ul style="list-style-type: none"> • Reserves • Johnsonville Park needs destocking and some revegetation.
11	East of Khandallah Park	2blks 10ha approx	Regenerating mixed broad leaf forest	<ul style="list-style-type: none"> • buffer zone to Khandallah Park • high recreational value • rich source of regeneration • good variety of species 	<ul style="list-style-type: none"> • old man's beard infestation 	<ul style="list-style-type: none"> • potential subdivision 	Unknown. Possibly private	Status 5 <ul style="list-style-type: none"> • None • Needs to be added to Khandallah Park.
12	Wilton Bush/Johnston Hill	180ha	Pre-European mature and regenerating mixed broad leaf/podocarp forest	<ul style="list-style-type: none"> • some ancient forest • significant heritage site • good variety of species • many regionally rare • potential for species extension • stream preservation 	<ul style="list-style-type: none"> • good in most areas • possum damage • gorse • pine plantings 	<ul style="list-style-type: none"> • gorse and weed invasion • stock intrusion • public overuse 	WCC and private?	Status 2 <ul style="list-style-type: none"> • Majority reserves (2) 120ha. • One block between Johnston Hill and Wilton Bush needs to be added to the reserve.
13	North of Stellan Park (below wireless)	30ha	Regenerating native forest	<ul style="list-style-type: none"> • good regeneration • important visual backdrop 	<ul style="list-style-type: none"> • needs surveying 	<ul style="list-style-type: none"> • alternative use 	Private?	Status 5 <ul style="list-style-type: none"> • None • Possible covenant or add to town belt reserve

Significant Ecological Sites - Wellington City Area (cont...)

Site No.	Site Name	Approx Area (ha)	Site Description	Reasons for Significance	Condition of Site	Threats	Ownership	Protection Status
14	Appleton Park/Karori Cemetery link	30ha	Some native regenerating bush on edges with mainly exotics in park and cemetery.	<ul style="list-style-type: none"> important as link to bird corridor visual eyesore that could be improved by planting 	<ul style="list-style-type: none"> very rough and poor many exotics Appleton park very wet and limited use 	<ul style="list-style-type: none"> further exotic planting. area needs extensive revegetating with native species. 	WCC	<p>Status 4</p> <ul style="list-style-type: none"> Reserve for recreation and RIP only. Native revegetation desirable in selected areas.
15	Wrights Hill/Burrows Ave	80ha	Regenerating mixed coastal/broad leaf forest	<ul style="list-style-type: none"> potential bird link regenerative potential historical value 	<ul style="list-style-type: none"> gorse and other exotic weeds 	<ul style="list-style-type: none"> dumping stock invasion 	Majority WCC. Some private	<p>Status 2</p> <ul style="list-style-type: none"> Reserves (2) 50ha No protection on 30ha Needs adding to reserve.
16	South Karori Rd Bush	120ha	Regenerating broad leaf/coastal forest	<ul style="list-style-type: none"> good regeneration good sized remnant links to other nearby bush areas 	<ul style="list-style-type: none"> old man's beard and other weeds serious goat and possum damage needs surveying 	<ul style="list-style-type: none"> fire grazing weeds possums alternative use goats 	Private (several titles)	<p>Status 5</p> <ul style="list-style-type: none"> None Possible covenants desirable
17	Karori Reservoir	190ha	Regenerating mixed coastal/broad leaf forest	<ul style="list-style-type: none"> good variety of birds for the city good botanical and species value one of best regenerating forest areas 	<ul style="list-style-type: none"> some old mans beard damage logging on upper ridges pine plantation possums 	<ul style="list-style-type: none"> logging further pine planting opening dams and area for public use 	WRC	<p>Status 4</p> <ul style="list-style-type: none"> Water catchment reserve only. Needs permanent reserve status.
18	Polhill Gully	40ha	Regenerating coastal/broad leaf forest	<ul style="list-style-type: none"> good regeneration Proximity to other bush area bird corridor link 	<ul style="list-style-type: none"> good overall but needs surveying 	<ul style="list-style-type: none"> subdivision and housing encroachment 	Uncertain	<p>Status 5</p> <ul style="list-style-type: none"> None at present Needs reserve status

Significant Ecological Sites - Wellington City Area (cont...)

Site No.	Site Name	Approx Area (ha)	Site Description	Reasons for Significance	Condition of Site	Threats	Ownership	Protection Status
19	Gully south of Panorama Heights	100ha	Corse and mahoe regeneration	<ul style="list-style-type: none"> •bird link to town belt and Tapu Te Ranga Marae •regeneration potential 	<ul style="list-style-type: none"> •mostly gorse •some areas crushed at some stage recently 	<ul style="list-style-type: none"> •fire •alternative use 	WCC?	Status 5 <ul style="list-style-type: none"> •None •Needs reserving
20	East Happy Valley Rd	20ha	Corse	<ul style="list-style-type: none"> •future bird corridor link to Tapu Te Ranga Marae •regeneration potential 	<ul style="list-style-type: none"> •poor •needs assisted native regeneration 	<ul style="list-style-type: none"> •subdivision •alternative use 	Unknown	Status 5 <ul style="list-style-type: none"> •None •Needs reserving
21	Tapu Te Ranga Marae	20ha	Corse, broom and plantation	<ul style="list-style-type: none"> •intended private bush and bird reserve 	<ul style="list-style-type: none"> •gorse and other weeds 	<ul style="list-style-type: none"> •fire 	Private - Marae	Status 1 <ul style="list-style-type: none"> •Private Reserve •Needs support and assistance.
22	Manpuia Park area, Miramar	10ha	Regenerating mahoe/manuka	<ul style="list-style-type: none"> •one of few bush patches on Miramar Peninsula •moderate regeneration 	<ul style="list-style-type: none"> •needs surveying 	<ul style="list-style-type: none"> •surrounded by housing 	Unknown	Status 5 <ul style="list-style-type: none"> •None •Possible reserve
23	Pt Hallswell to jetty - coastline & cliff	2km coast	Coastal plant and marine communities	<ul style="list-style-type: none"> •representative of Wgtn region •one of few close to city 	<ul style="list-style-type: none"> •good though heavily modified (roads, etc) 		Crown?	Status 5 <ul style="list-style-type: none"> •Unknown •Possible reserve
24	Pt Dorset coastal area	1km coast	Coastal plant regeneration	<ul style="list-style-type: none"> •regionally representative of coastal vegetation 	<ul style="list-style-type: none"> •needs surveying 	<ul style="list-style-type: none"> •alternative use •subdivision etc. 	Crown, formerly military	Status 5 <ul style="list-style-type: none"> •None •Possible reserve
25	Moa Point escarpment and Eastern Walkway	40ha	Open coastal regenerating vegetation	<ul style="list-style-type: none"> •recreational potential •scenic value •some botanic potential 	<ul style="list-style-type: none"> •gorse and other weeds 	<ul style="list-style-type: none"> •fire 	WCC and Crown	Status 2 <ul style="list-style-type: none"> •Reserve on majority. •Coastal section may need more protection.

Significant Ecological Sites - Wellington City Area (cont...)

Site No.	Site Name	Approx Area (ha)	Site Description	Reasons for Significance	Condition of Site	Threats	Ownership	Protection Status
26	Tapu Te Ranga Island and Siren Rocks	5 ha	Coastal island and rock platform	<ul style="list-style-type: none"> • rare scrub species • nesting sites for birds 	<ul style="list-style-type: none"> • good • roads on coast 	<ul style="list-style-type: none"> • public proximity and access 	WCC	Status 1 Reserve
27	Spooky Gully/south coast	750ha	Coastal cliff gully and steep slope including regenerating forest, scree slope and diverse plant communities	<ul style="list-style-type: none"> • unique botanically and zoologically. • of national significance • 29 regionally rare species • 5 nationally rare species • Karaka grove • good regeneration • marine significance • seal haul out at Sinclair Head 	<ul style="list-style-type: none"> • modified • stock damage • good overall potential 	<ul style="list-style-type: none"> • goats • pine planting • quarrying • other alternative uses • human interference 	WCC Crown	Status 3 <ul style="list-style-type: none"> • Inland - none • Urgently needs reserving. • Coast - some areas reserved (Red Rocks)
28	Lower Long Gully and cliff	200ha	Coastal vegetation and cliff	<ul style="list-style-type: none"> • speargrass weevil • dotterels • seal haul out • coastal vegetation • geologically important (fault escarpment) 	<ul style="list-style-type: none"> • modified • grazed 	<ul style="list-style-type: none"> • goats • farming • alternative use 	Inland - Private Coast - Crown	Status 5 <ul style="list-style-type: none"> • None • Needs reserving
29	Tongue Pt Coastline	1km	Raised wave cut platform with seal colony	<ul style="list-style-type: none"> • seal haul out • good bird life • wildlife value 	<ul style="list-style-type: none"> • good 	-	Crown	Status 1 <ul style="list-style-type: none"> • Wildlife Reserve
30	South Makara Rd	10ha plus sur-rounds 20ha	Pre-European coastal/podocarp forest plus regenerating scrub	<ul style="list-style-type: none"> • one of few remnants in this area • pre-European forest • contains ancient rimu 	<ul style="list-style-type: none"> • needs surveying 	<ul style="list-style-type: none"> • grazing 	Private	Status 5 <ul style="list-style-type: none"> • None • Needs fencing and covenant

Significant Ecological Sites - Wellington City Area (cont...)

Site No.	Site Name	Approx Area (ha)	Site Description	Reasons for Significance	Condition of Site	Threats	Ownership	Protection Status
31	Cape Te Rawhiti Coastline	3km	Wave cut platform with seal colony	<ul style="list-style-type: none"> • seal haul out • good bird life • wildlife value 	<ul style="list-style-type: none"> • good 	-	Crown	Status 1 • Wildlife Reserve
32	Makara Rd	10ha	Regenerating coastal forest	<ul style="list-style-type: none"> • one of few in the area 	needs surveying	<ul style="list-style-type: none"> • needs surveying 	Private	Status 5 • None
33	NZPO Receiving Station	15ha	Pre-European coastal forest	<ul style="list-style-type: none"> • good representative example of original forest • one of very few remnants • contains rimu 	<ul style="list-style-type: none"> • good • high public use 	<ul style="list-style-type: none"> • possums • public abuse 	Telecom	Status 5 • Uncertain • Informal Reserve
34	Makara River Mouth Estuary	10ha	Coastal saltmarsh	<ul style="list-style-type: none"> • unique to region • rare plant species • fish and bird breeding area 	<ul style="list-style-type: none"> • good 	<ul style="list-style-type: none"> • rubbish • farm runoff 	Crown	Status 1 • Unknown but thought to be reserved • Needs scientific/wildlife reserve status
35	North Takarau Gorge	3ha	Tawa forest remnant	<ul style="list-style-type: none"> • one of very few remnants in this area • some regionally significant plant species 	<ul style="list-style-type: none"> • needs surveying • fenced 	-	Private	Status 1 • Private Reserve
36	Pipinui Point	-	Rock stack nesting site	<ul style="list-style-type: none"> • white fronted tern nesting site • sooty shearwater colony • only mainland breeding locality for these 2 birds 	<ul style="list-style-type: none"> • unknown 	<ul style="list-style-type: none"> • possible human interference 	Crown	Status 1 • Wildlife Reserve

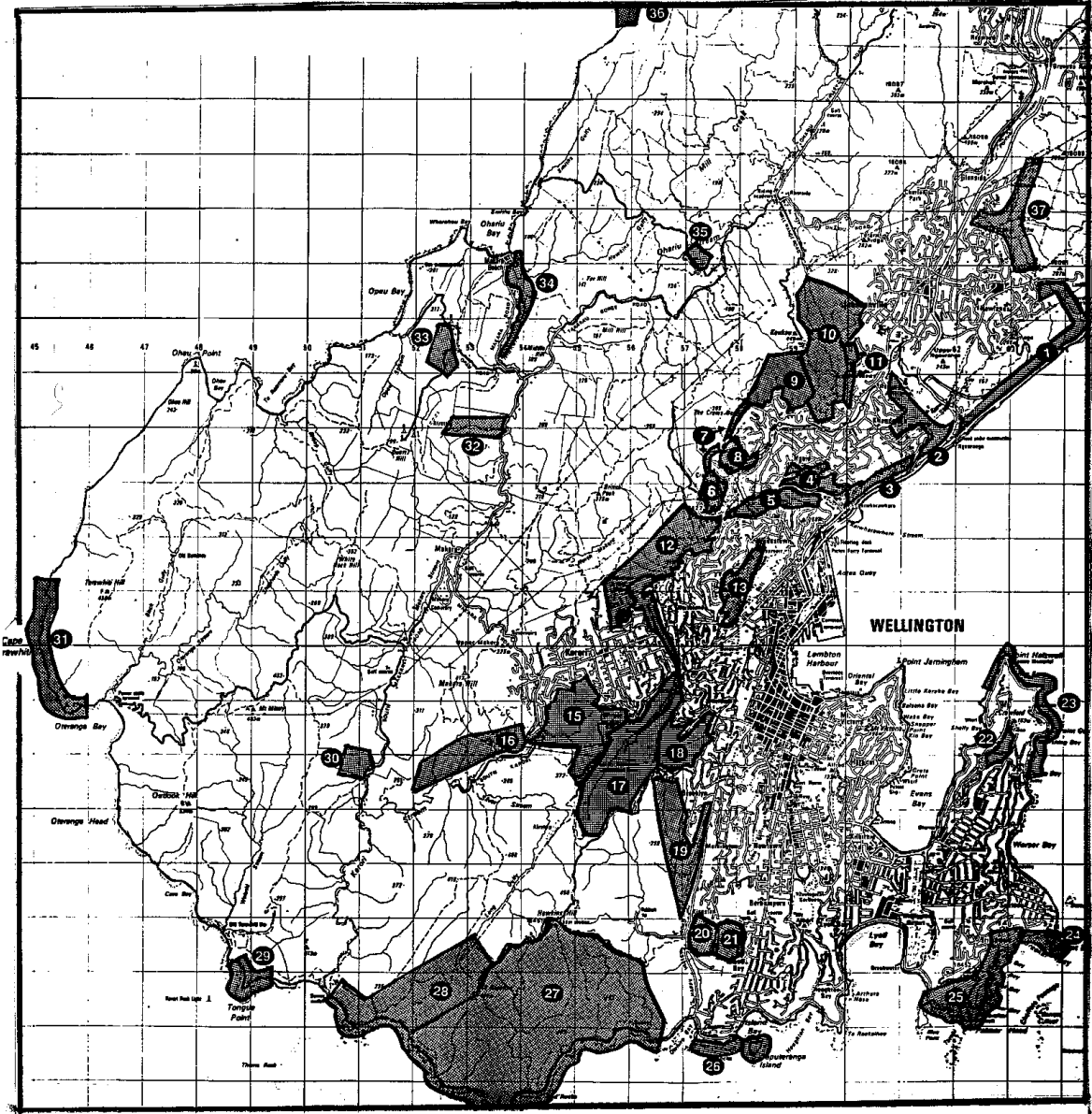
Significant Ecological Sites - Wellington City Area (cont...)

Site No.	Site Name	Approx Area (ha)	Site Description	Reasons for Significance	Condition of Site	Threats	Ownership	Protection Status
37	Seton Nossitor Park area (Newlands/Paparangi)	40ha	Regenerating broad leaf scrub/forest	<ul style="list-style-type: none"> possible future link to Tawa/Porirua good regeneration potential 	<ul style="list-style-type: none"> moderate 	<ul style="list-style-type: none"> possums fire dumping subdividing on edges 	WCC Some private?	Status 2 <ul style="list-style-type: none"> Seton Nossitor Park is reserve (30ha) Area behind Paparangi needs investigating

Outstanding or Far-in-the-Future Issues

- Identification of further potential sites in Te Rawhiti/Ohariu Valleys. (These areas are particularly dead ecologically.)
- Potential extension of 'corridor' from Johnsonville Park to Elsdon Reserve.
- Gradual revegetation of Town Belt with natives.
- Linkage of Karori Reservoir to Spooky Gully.
- Identification and preservation of smaller areas within the city (under 10ha).
- Further extension of private reserves in South Karori Road.

Map - Location of Significant Ecological Sites - Wellington City Area



Appendix C

Suggested Native Plants Suitable for the Wellington Area

Nursery Species: (Faster growing and/or hardy)

Scientific Name	Common Name	Suitable for:
• <i>Aristotelia serrata</i>	Wineberry/ Makomako	Sheltered/fertile
• <i>Brachyglottis repanda</i>	Rangiora	Dry/coastal/fairly sheltered
• <i>Cassinia</i>	Tauhinu	Dry/exposed/coastal
• <i>Coprosma repens*</i>	Taupata	Dry/exposed/coastal
• <i>Coprosma robusta*</i>	Karamu	Sheltered
• <i>Coprosma grandifolia</i>	Kanono	Sheltered
• <i>Cordyline australis</i>	Cabbage Tree	Wet/dry/exposed
• <i>Griselinia littoralis</i>	Puka/Broadleaf	Exposed/coastal/fire resistant
• <i>Hebe stricta</i>	Koromiko	Dry/exposed
• <i>Kunzea ericoides</i>	Kanuka	Dry/exposed
• <i>Leptospermum scoparium</i>	Manuka	Dry/exposed/wet
• <i>Meliccytus ramiflorus*</i>	Mahoe/Whiteywood	Shelter to start/exposed/ coastal
• <i>Myoporum laetum</i>	Ngaio	Dry/exposed/coastal
• <i>Myrsine australis</i>	Mapou/Red Matipo	Sheltered/damp
• <i>Oleria rani</i>	Heketara	Dry/exposed
• <i>Phormium tenax*</i>	Flax	Wet/dry/exposed/coastal
• <i>Pittosporum eugenioides</i>	Tarata/Lemonwood	Dry/sheltered to begin
• <i>Pseudopanax arboreus*</i>	Fivefinger	Sheltered to begin
• <i>Pseudopanax crassifolius</i>	Lancewood	Sheltered to begin

* Also favoured by birds as food sources.

Bird Food Source Species: (In addition to those marked * above.)

All successional or high canopy species

Scientific Name	Common Name	Favoured by:
• <i>Alectryon excelsus</i>	Titoki	Fruit eaters
• <i>Beilschmiedia tawa</i>	Tawa	Fruit eaters
• <i>Corynocarpus laevigatus</i>	Karaka	Fruit eaters
• <i>Dacrycarpus dacrydioides</i>	Kahikatea	Fruit eaters
• <i>Dysoxylum spectabile</i>	Kohekohe	Fruit eaters
• <i>Elaeocarpus dentatus</i>	Hinau	Fruit eaters
• <i>Fuchsia excorticata</i>	Kotukutuku/Tree Fuchsia	Fruit/honey eaters
• <i>Hedycarya arborea</i>	Pigeonwood	Fruit eaters (esp. pigeon)
• <i>Knightia excelsea</i>	Rewarewa	Honey eaters
• <i>Metrosideros robusta</i>	Northern Rata	Honey eaters
• <i>Nestegis cunninghamii</i>	Black Maire	Fruit eaters
• <i>Pennantia corymbosa</i>	Kaikomako	Fruit eaters

Bird Food Source Species cont...

Scientific Name	Common Name	Favoured by:
• <i>Podocarpus ferrugineus</i>	Miro	Fruit eaters
• <i>Podocarpus totara</i>	Totara	Fruit eaters
• <i>Podocarpus spicatus</i>	Matai	Fruit eaters
• <i>Rhopalostylis sapida</i>	Nikau	Seed eaters
• <i>Sophora microphylla</i>	Kowhai	Honey eaters
• <i>Weinmannia racemosa</i>	Kamaha	Honey eaters

Other Significant Local Species

Scientific Name	Common Name	Type/Significance:
• <i>Dacrydium cupressinum</i>	Rimu	High canopy/beautiful foliage
• <i>Laurelia novae-zelandia</i>	Pukatea	High canopy/beautiful foliage/rare

