# Poor Knights Islands Story©

**Guy Bowden**
Tawapou Coastal Natives, Main Rd, Matapouri RD 3, Whangarei
Email: tawapou@igrin.co.nz

## INTRODUCTION

**The Poor Knights have always featured in my life. In the early 1960s my parents bought a farm on the Tutukaka coast where I grew up with the rest of my family and where I live with my wife and two children today. It just so happens that our farm is the closest point on the main land to the Poor Knights. From where ever you are on the farm they lie right on the horizon dominating the view. My father who had a science degree and knew a lot about marine biology was good friends with many of the early pioneering scuba divers; in particular Bill Palmer and they would spend many evenings discussing Bill's new finds. We also seemed to have a number of Poor Knights plants in our garden and a specially fenced paddock for a collection of flax snails (*Placostylus* species) that just so happened to be the same as you would find on the Poor Knights.**

## LOCATION

**Geology.** The Poor Knights are located 20 km off shore midway between the Bay of Islands and Whangarei Harbour. The Islands have been isolated from mainland New Zealand (NZ) for longer than any other group, apart from the Three Kings Islands, 60 km northwest of Cape Reinga. What remains today are heavily eroded rims of a large volcano, which erupted some 10 million years ago. This volcano was possibly 1000 m high, measuring 15 to 25 km in diameter.

Today the group consists of two main islands, Tawhiti Rahi at 163 ha and 191 m high, and Aorangi at 110 ha and 216 m high. There are also several smaller islands and rock stacks. Six and a half km to the southwest are the Pinnacles and the Sugar Loaf. Collectively these islands form the Poor Knights Islands Nature Reserve. Rising vertically 100 m from the sea floor the many land and underwater features of caves and archways are the result of constant erosion during fluctuating sea levels.

The Poor Knights Islands are considered to be eroded rhyolite from the remains of large lava domes, which rose up from a deep fracture running north from the Coromandel Peninsula. Even during the last ice age, 15,000 years ago, when sea levels receded joining the other northern islands and the Hauraki Gulf Islands to the mainland, the Poor Knights Islands remained separated by the depth of water.

## HISTORY

According to the Maori descendants, a population of some 300 to 400 hundred people inhabited the islands for many generations. The islands were occupied by a sub tribe or hapu of the Ngatiwai people. The first account of a European sighting was that of Captain Cook who passed by on 25 Nov. 1769. As a child I, like many other locals, was led to believe that Captain Cook had dropped pigs there. Cook's journals make little reference to the islands as he sailed north 2 miles off the coast of the

mainland. It is only in his completed charts that the islands are named the Poor Knights Islands without explanation. The group certainly resembles the shape of a person lying down. Effigies of crusaders lay heads to the south, feet thrust towards the warm north sun and, since Abel Tasman named New Zealand's most northern islands the Three Kings, it seems Cook followed. The rocks now known as the Pinnacles and Sugar Loaf he named the Poor Squires.

Around 1808 the Hikutu tribe from Hokianga harbour on the west coast set out in canoes paddling around the top of the north island (320 km) intending to purchase pigs from the people on the Poor Knights, but they left empty handed having been denied even the right to land. Utu, or revenge, played a big part in Maori society. Their chance for redress came 12 years later when, having been informed that all the island's fighting men were away supporting the chief Hongi Hika in the south, the Hikitu set off again. This time on a massive raid and as missionary King records "fed like vultures on the dead and returned home laden with slaves and the flesh of men." Among the slaves was Chief Tatua's wife, Oneho, and his daughter. Only 10 of the islands inhabitants survived the massacre. When Tatua returned he was met by the few survivors who had hidden in caves. They related the horrid massacre to him and, utterly devastated, they buried the dead, performing the last rites over the slain and declared the islands to be wahi tapu (sacred place). Abandoning the islands, they moved to live on the coast of the mainland where descendants of these people still live today.

There remains clear evidence of the earlier habitation on both main islands, numerous terraces, stone work, pa (fortified area) sites, and platforms for house sites. On the northern island, Tawhiti Rahi where there were no pigs, pa sites are in perfect condition giving quite an eerie spiritual feeling when one is walking around. Many artifacts are seen around the pa and house sites; adzes, carved stockade posts, coffin boards, obsidian flakes, bird traps, middens, areas of cultivation, and numerous burial caves with the remains of people resting on woven mats.

It is not known why or from whom a European, Mr. J. S. Pollock, purchased the Islands in 1845. The crown bought them in 1882 designating them a lighthouse reserve though no lighthouse was erected until the late 1950s. In 1922 they were declared a scenic reserve and in 1929 a sanctuary for native and imported game, the only animals in the latter category being the pigs, the last of which were shot in 1936. In 1967 the islands became part of the Hauraki Gulf Maritime Park and in 1977 they became a nature reserve with the highest level of legal protection.

## PLANTS

As you approach the islands from the west they appear to be covered almost entirely with pohutukawa (*Metrosideros excelsa*). As you move closer you can see the caves and pitted cliffs where in any crevice wide enough to hold the smallest amount of soil plants will take hold — coastal tussock (*Chionochloa bromoides*), ice plant (*Disphyma*), N.Z. flax (*Phormium tenax*), renga renga lily (*Arthropodium cirratum*), *Coprosma repens*, and higher up Poor Knights lilies (*Xeronema callistemon*) perching on outcrops.

On the eastern side of Aorangi is the only shore line of any substance, known as "the beach" by weeding parties and inland is lush subtropical broadleaf forest. According to the published papers of de Lange and Cameron in the *New Zealand Journal of Botany* 1999, the number of vascular flora of the island group is 276

species, with possibly only one plant endemic to the islands. However they also conclude that many are near endemics. Their close proximity to the coast, prevailing westerly winds, and being within reach of foraging birds effectively prevents the genetic isolation of the Poor Knights flora.

It would be fair to say that the islands' broadleaf plants have larger, glossier leaves than their mainland counterparts, a phenomenon commonly known as "island gigantism," possibly caused by highly fertile soils continuously enriched by millions of seabirds which nest there. A more accepted theory is that the plants flourish because the islands escaped the cold of the last ice age assisted by the warm waters of the east Auckland current which just graze the islands before heading back out to sea.

The first botanist to publish an account was Cockayne in 1905. He landed briefly on Aorangi for 2 to 3 h. Although he missed the Poor Knights lily he did discover a large population of giant flowering broom. Pigs (*Carmichaelia williamsii*) were still running wild during Cockayne's visit and what he described as grassland is now covered in thick forest growth up to 6 m high.

Poor Knights lily (*X. callistemon*) or Taranga raupo, still a comparatively rare plant in cultivation, would have to be one of New Zealand's finest horticultural plants as stated in Muriel Fisher's book, *Gardening with New Zealand Plants*. In 1924 another N.Z. botanist, Oliver, with Fraser, a Whangarei Harbour Engineer, collected material of *Xeronema*. Mr. Fraser knew of this plant from Maori tradition. Elsewhere, *Xeronema* had been known only by *X. moorei* growing at about 5000 ft up in the inland mountains of New Caledonia. In spite of the great difference in their environment the two species bear many similarities. I know of only one place on the islands where the Poor Knights lily comes close to the sea. They are found growing mostly near or at the top of the islands, perhaps a link to a higher altitude past and the reason Cockayne did not notice them in 1905.

This is a slow-growing plant; our first attempts at growing it were dismal and in fact, we probably killed more plants than we grew. It wasn't until after several visits to the islands that we had success. It seems that although large plants can be found growing perched on rocks on cliff edges basking in full sun and wind, in cultivation they respond much better to semi-shade areas. In fact the largest plants with their sword-like leaves, up to 1.8 m high, are under the canopy of large pohutukawa; sometimes growing in the forks of branches where native parakeets hollow out nests at the base of the plants. They need good air movement and perfect drainage and after 8–10 years you can expect some spectacular flowers.

Perhaps the most successful Poor Knights plant in cultivation is *Arthropodium* or renga renga lily. This plant was introduced into cultivation by Malcolm Woolmore of Lyndale Liners. Although named "Matapouri Bay" I am in no doubt that its origins lie at the Poor Knights, as Malcolm spotted it in our neighbour's garden. These people being passionate gardeners and great sailors often brought plant material back from the islands. They would pull up to the rocky coast, scramble ashore, pull or push large bits of vegetation off throwing them on to the deck of the boat. A nephew told me that as kids they would have a great time catching the lizards and strange insects that crawled out of the vegetation as it hit the deck. The Poor Knights renga renga lily has an unusually robust habitat, larger leaves, and larger than usual showy flowers.

There are a number of other Poor Knights plants appearing in cultivation. *Myrsine* Poor Knights form makes an excellent alternative to *Buxus*. *Coprosma repens*, a

prostrate form is fantastic for covering bare clay banks and Auckland zoo has used this plant extensively throughout the zoo's new enclosures along with Poor Knights *Muehlenbeckia complexa*.

Noticeable is the almost complete lack of podocarps or any of the large conifer forest trees. During our weeding surveys one small totara (*Podocarpus totara*) tree was discovered and a number of young kauri (*Agathis australis*) trees, with one tree large enough to wrap your arms around. While it is easy to understand how a bird could deposit seeds from a totara tree it is harder to understand how a number of kauri seeds could blow from the mainland. Perhaps the islands' greatest contribution to the New Zealand's flora is the preservation of some of our rarest and endangered plant species. Provided that the islands remain weed and rodent free there is no reason for this to change.

## BIRDS

The islands are noisy with prolific bird, reptile, and insect life. Seabirds are the making of the islands. The under story of vegetation is riddled by the burrows of millions of seabirds and in some places it resembles low tide in a mangrove estuary. If you happen to be there in late August early September (late winter to early spring) you will be sharing with the enormous numbers of Buller's shearwaters (*Puffinus bulleri*). Over two million birds are said to nest on the islands. The Poor Knights are the only known nesting place in the world for this species. These birds arrive in early spring usually reclaiming the same burrows they have used in previous years. Laying one egg, parents incubate the egg in shifts of 4 to 5 days. Fledglings and parents leave the islands in early May (late autumn) to winter in the Northern Pacific. Once night time has fallen a steady stream of birds start crash landing into the canopy above, falling to the ground, sometimes into your dinner, your tent, or on to your head, then staggering off to announce very loudly to their partners that they are back. This is greeted with what sounds more like a good ear bashing for being late, rather than any sort of welcome home. The activity continues until around midnight when there is a short lull. Then about 3 AM the birds that have been in the burrows for days leave, this again causes much vocal discussion. Sleep for the human visitor is not easy.

The Maori did well to keep the kiore (native rat) off the island for over 300 years. As we all know, rats are notorious stowaways. If rats had arrived the Buller's shearwaters could not have been sustainably harvested. I believe this is the reason there are no Pacific rats on the islands.

There are many other sea birds nesting but not nearly in such great numbers including, little blue penguin, fairy prions, Pycroft's petrel, grey faced petrel, diving petrel, little shearwater, fluttering shearwater, and sooty shearwaters. On the outlying Sugar Loaf Island there is a large gannet colony.

Mortality among nesting seabirds although regarded as remarkably small in relation to actual numbers of birds, is visible. A common death is strangulation in the fork of a tree during landing. Hawks, black back gulls, and tuatara (N.Z. endemic reptile, *Sphenodon punctatus* subsp. *punctatus* ) claim a good number. Generally cohabitation of burrows between shearwaters and tuatara seems to work for both but the reptiles have been seen dining out on young chicks and sometimes attacking adult birds. Tuatara can be grumpy and are best left alone if upset. One member of a weeding party, seeing a tuatara's tail protruding from a burrow thrust his

hand down to catch the animal which in the process ended up catching him with its mouth and the jaw, firmly locked onto his hand between his thumb and index finger, remained there pulsating for the next 2 h. When you can live over 150 years there is no hurry.

The dominant bird of the bush is the bellbird (*Anthornis melanura*), considered a subspecies and endemic to the islands. Flocks of up to 50 are regularly seen. The breeding behavior and total disregard or fear of humans is testament to the fact the islands are rodent free. Bellbird chicks are often found tucked under clumps of ferns or sitting just inside entrances of sea birds burrows. I recall a time phoning home from a high point on the islands and my wife being quite unable to hear me above the deafening chorus of bellbirds. Most years, towards the end of summer young birds often appear on the adjacent mainland probably young males without a territory.

The next notable bird of the islands is the shy and fascinating spotless crake (*Porzana tabuensis*). The headquarters of the New Zealand population of this bird is on Aorangi Island. Almost all mainland sightings have been in swamps or marshy areas. On the islands the birds roam over dry forest floor feeding on insects and are strongly territorial. They are rarely seen in full flight but run at high speed and swim well. Another common ground bush bird seen occasionally is banded rail. Red fronted parakeets or karkariki, have a large resident population. In a hawk-roosting place piles of parakeet feathers and remains along with discarded bodies of giant weta (native grasshopper-like insect) looked like the work of rats and cats. Hawks are always present, cruising the tree tops looking for opportunities to snatch a feed.

There is not a great deal of diversity among the bird species. Even though there are good populations of tui (*Prosthermadera novaeseelandiae*) on the adjacent mainland. It is interesting to note that no one has ever reported seeing tui on the islands. Occasionally we would see wood pigeons or kaka (forest parrot), but it would appear that these were visiting birds rather than residents, which explains why occasional Poor Knights plants appear on the mainland and mainland plants occasionally appears on the Poor Knights.

## REPTILES, INSECTS AND SNAILS

The Poor Knights are renowned for their diversity of reptiles, which include the northernmost population of tuatara (N.Z. endemic reptile, *S. punctatus* subsp. *punctatus*), also many lizard species — two of which are endemic. There is also a remarkable diversity of endemic or nationally scarce invertebrates.

On the Poor Knights reptiles play a huge role in the ecology of the forests; there are as many lizards on the Poor Knights as there are forest birds. At night you can see geckos pollinating ngaio (*Myoporum laetum*), *Xeronema*, and pohutukawa flowers. They also eat coprosma berries and kawakawa (*Macropiper excelsum*) fruit acting as distributors and pollinators in the same way birds would. I have been told by one of the visiting parties on the Poor Knights that they came across a Duvaucel's gecko, New Zealand's largest gecko (up to 30 cm long) swallowing a 3-cm-long Karaka (*Corynocarpus laevigatus*) berry. When heading out at night for a walk with a torch you would swear it was raining with constant rustling of insects, geckos, and skinks making their way through the dry leaf litter. There are also the large invertebrates on the Poor Knights, particularly the weta and the centipede, both giants of their kind. The Poor Knights weta (*Deinacrida dalai*) grows to

80 mm in length and can weigh close to 50 g, heavier than a bell bird. The centipede can reach 250 mm in length. When on the Poor Knights, Rod Morris described in a National Geographic encountering a centipede dragging a gecko its own size across the forest floor and returning several hours later to find only the skeleton remaining. The grapsid crab has been seen at night several hundred metres from the sea with flax snails in its claws dragging them back to coastal rock pools to consume at their leisure.

## MARINE LIFE

Recreational diving is the biggest activity at the Poor Knights today with Jacques Cousteau rating the Islands as one of the top 10 dive spots in the world. In hindsight the Poor Knights should have been a fully protected marine reserve from the start. In 1971 Parliament created the marine reserves act and in 1981 the Poor Knights finally became the country's second marine reserve. It took another 17 years, until 1998 to fully protect the remaining 95% of its area from fishing. A recent study by Auckland university Ph.D. student, Chris Denny, found that snapper had increased 14 fold between 1999 and 2001.

The warm East Auckland current originating in the north Tasman near Lord Howe Island keeps the water temperature a degree are two warmer than on the mainland. The islands rise sharply from relatively deep water and there are no rivers or streams to cloud the water with sediment. Divers can expect remarkable visibility, sometimes in excess of 50 m. The southward flowing current is a conveyor belt of tropical water carrying exotic fish and warm water molluscs. Some of New Zealand's best known scuba pioneers such as Wade Doak, Kelly Tarlton, and Bill Palmer were part of the trailblazing era of Poor Knights diving. Every dive brought the possibility of finding new species, not just new to New Zealand, but new to science. Wade Doak said, "It was like being the first guys on the moon." Deep dives up to 60 m were common with few today risking such deep descents. Many of the greatest finds lay at this limit including the largest measured black coral tree in the world at 4.6 m from base to tip. Of the 16 caves around the islands Rikoriko cave is the most impressive, believed to be the largest sea cave in the world, big enough to accommodate several boats. A Japanese submarine is said to have hidden in the cave during World War II. Perhaps the most unusual is the air bubble cave, containing a pocket of trapped air large enough for divers to stand up in and breathe.

Although the total exclusion of fisherman from the Poor Knights caused economic hardship for some charter boats, at the time, I think the whole feel of the Islands is better today and increased concentrations of fish numbers clear justification for the reserve.

## WEEDS AND WEED CONTROL PROGRAMME

In 1990, as Tutukaka Marina Manager, I created a garden of Poor Knights plants for visitors and locals. Northland Department of Conservation were impressed by the idea and granted me a permit to collect plants from the islands. A party of elders of the descendants of the Poor Knights people was visiting the islands to investigate the possibility of burying their important dead back on the islands. Bad dreams of one of the group the following night put paid to this idea. However, during this visit one of the party found a seed pod of a moth vine (*Araujia sericifera*). Considered a very serious weed, it was important to survey the extent of the inva-

sion. In my capacity as Marina Manager, I was able to organize an island drop off and pick up. Over a period of 2 years several visits were made for up to 10 days at a time. Random wanderings did find weeds, but a more systematic approach was needed. I was asked by the department to put together a weed plan.

Out of the 45 exotic plants growing on the islands four main weeds were identified as likely to have adverse effects on the ecosystem. Pampas grass (*Cortaderia selloana*), Mexican devil (*Ageratina adenophora*), mist flower (*A. riparia*), and moth vine (*Araujia sericifera*) can form dense swaths producing thousands of wind blown seeds. In 1996 the Poor Knights weed eradication plan was developed. It was made up of six key components:

1) Management areas and regimes. Consideration was given to the location of existing weed sites. Almost all weed infestations occur in areas of disturbance within exposed coastal faces, shrub land, and broadleaf forest; these are searched twice a year to coincide with the earliest flowering weeds. In mature pohutukawa there is almost a total absence of weeds and these are sweep searched every 2 years.
2) A database for recording sites and control work undertaken.
3) Aerial surveys undertaken every second year over inaccessible cliff faces and difficult to find adult moth vines. A technique of throwing a rock with bright colored flagging tape out the window of a helicopter was used.
4) Searching techniques were developed.
5) Standardized site marking with plastic numbered tags were plotted onto a field map.
6) Strictest hygiene protocols were set.

Although reinvasion from the main land is always going to be a threat to the islands the main threat is the spread of weeds already established on the islands. The weed plan turned out to work better than any one could have imagined and has gone on to form the basis of many weed plans on other off-shore islands.

## CONCLUSION

The Poor Knights provide a glimpse of what must have been in times past, where seabirds were cultivators and aerial top dressers and where forest birds had no fear. It is an ancient ecological order functioning in abundance today.