Project Name: Enhance Inshore Coastal Fisheries and Freshwater Tuna Fisheries Commercial Production near Maketu and in doing so demonstrate a national export revenue and tourism creation potential that could be applied in other parts of New Zealand – i.e. create an inshore coastal fisheries commercial production increase fish-pump working model.

Objective of project: Recreate Maketu Estuary maritime marsh galaxuis spawning habitat in connection with the Kaituna River and its tributaries and in connection with significant lowland wetland galaxies and tuna habitat recreated, so as to rebuild potential inshore coastal fishery commercial production. This proposal has the unanimous backing of Maketu Taiapure Committee of Fisheries Management as long as it is done in conjunction with EBOP and DOC.

Project plan: (My commitment commenced in 1968)

1. Return the Kaituna River flow in full to Maketu Estuary: Since achieved with a forecast return of 2012

2. Recreate a significant area of lowland freshwater galaxius and tuna habitat in connection with Maketu Estuary: A work in progress.

McDowall: “From the high fecundity (number of eggs) and the large size of fish living in them, lowland bush swamps with brown water appear to be the ideal habitat for Galaxius maculatus”.

I recommend that Te Arawa Lakes Trust does offer Transit NZ fill for the Eastern Arterial in exchange for Te Arawa wetland creation. Please note that a potential Te Arawa fresh water wetland could be partially drained during the month of February by temporarily removing sills and so any undesirable weed infestation or over-growth could be significantly reduced naturally by the sun; as I surmise would have originally occurred in Te Awa Swamp which we are now seeking to re-create a remnant of. Further wetlands recreated along the course of the Kaituna Road, Ford Road and Pa Road drains and their tributaries could be maintained in the same way via No. 1 Pumping Station.

McDowall: “There is a higher density of adults in the lower river and they are found in predominance in brackish backwaters.”

Te Arawa Wetland could be dissected by a dam running south-east from the Maketu Road drain confluence, so that water leaving No. 1 pumping station would have to move around it through parallel zigzagging canals with deep Vs. These canals could be planted in raupo to purify farm run-off and to create ideal galaxies and tuna fresh water habitat, which would obviously and naturally be re-inhabited by these native species. When water levels were lowered in February galaxies and tuna could still have some supporting deep water habitat in these canals. The bends of these parallel connecting canals could have shallows to maintain water depth in the individual canals that would be connected at their ends only.

3. Recreate maritime marsh galaxius spawning habitat in the upper Maketu Estuary as had previously existed: This project now seeks funding to coordinate and employ contract labour and to purchase equipment for them to use as soon as the Kaituna River fresh water environment is returned to Maketu Estuary.

(McDowall: “For breeding purposes, Galaxius maculatus migrates downstream into tidal estuaries and downstream migration occurs before spring tides”).

D.H. McKenzie (1904); “During the months of March and April may be seen at high water spring tides, countless myriads of small fish from 4 to 6 inches in length, making the water literally boil, wherever any rushes exist.”

(Captain L. Hayes (1932); “Within tidal limits are mudflats bristling with rushes. Inanga spawn amongst rushes. Fairly long, thick growing grasses and rushes or similar vegetation is usually chosen. In March, I noticed Inanga evidently spawning everywhere amongst the rushes.”

Maritime marsh galaxius spawning habitat recreated in the upper Maketu Estuary as had previously existed, could be seen as an inshore coastal fisheries commercial production increase fish pump: The more ideal maritime marsh galaxius spawning habitat that is recreated within Maketu Estuary in conjunction with the creation of adjacent lowland adult galaxius, tuna and bully habitat, and in conjunction with the Kaituna River and all of its tributaries aquatic galaxius and tuna habitats, then the more commercial inshore coastal fisheries production that can and will be recreated, and the more fish that will be pumped into the adjacent ocean, as did use to occur naturally before wetlands were drained for pasture, and before Maketu Estuary maritime marsh spawning habitat was destroyed by the removal of Kaituna River fresh water flow.

A successful inshore coastal commercial fisheries re-establishment example at Maketu, could lead to the future creation of enormous national wealth from fisheries production increases and from associated economic stimulus throughout the country. The Maketu example could create a strong public desire for a lot more wetlands because people could be encouraged to recognise their financial value.

Pastoral farming that has been created by draining productive wetland can be compared with the potential production of New Zealand’s 200 mile economic zone, if that salt and connecting fresh water farmland was instead farmed by using time proven farm production increase techniques. We have the ability to build inshore coastal commercial fishery food chains in the same way that pastoral farmers are able to increase production by growing more grazing dry-matter. We also have the ability to create far more salt water farm production with far less effort because the much larger ocean farms itself as long as the food chains are there to support it. Fish eat smaller fish and so increasing whitebait and tuna elver numbers must in turn create a lot more very

exportable larger fish.

McDowall; “Wetlands are possibly one of the most endangered habitats in New Zealand, with thousands of hectares drained and converted to pasture each year. 84% of the wetlands in the Waikato Valley have disappeared in the last 140 years. Wetlands are undoubtedly a crucial habitat for Inanga. The populations of the various species have all declined because there is nowhere for them to live. It seems almost too simple to be true. And that’s not all. Whitebait spawn in estuaries, and out of all the aquatic habitats, estuaries seem most fragile and prone to damage. Towns release effluent into estuaries often with minimal treatment. Further change is brought about by channelling river mouths, constructing groynes, etc.”

4. Purchase all lowlands that are adjacent to Maketu Estuary and to the lower Kaituna River and convert them into wetlands that are connected with Maketu Estuary maritime marsh galaxies spawning habitat recreated.

Lowland fresh-water wetlands could be recreated in connection with Kaituna Road and Pa Road drains and their tributaries, and also with all drains and lowlands that are on the western side of the lower Kaituna River. These wetlands created could then lower nutrient levels from AFFCO Rangiuru and from Te Puke Borough sewerage treatment outlets with purposely constructed drains that could remove a significant nutrient loading that is currently entering the lower Kaituna River.

Initial budget: $5,000 planning, consultation, labour recruitment and coordination fee, plus $20,000 per annum paid in advance into Bay of Plenty Game Fishing Charters Westpac Account No. 030 474 0452 068 00 for employment of contract labour, and for purchase of spades, packs and wetsuit boots for use in replanting maritime marsh.

Maritime marsh could be taken at low tide from the back of Maketu Estuary Spit at its widest point to the east of Papahikahawai Channel, as well as from opposite Whakaue Marae where the back of the spit is continually being eroded due to introduction of Kaituna River flow to Maketu Estuary by Environment Bay of Plenty through Ford’s Twin Cuts, and in isolation from an original protective Papahikahawai Channel flow. The tip of the protruding section of the back of Maketu Estuary Spit may be eroded away anyway by the reintroduction of Kaituna River flow to Maketu Estuary through Papahikahawai Channel, as had originally occurred.

Maritime Marsh could be replanted in 1 meter quadrants throughout the upper Maketu Estuary. Planting could start near to No. 1 Pumping Station where there is currently enough fresh water being introduced to the estuary to support the re-establishment of maritime marsh, as has been demonstrated by trial plantings by DOC.

With planned plantings of 1,000,000 plants per hectare labour costs alone will far exceed the conservative figure listed above. Additional funding could allow

for more planting and for the purchase of farm drains, and for their conversion into productive wetland adult galaxies and tuna habitats that are in connection with Maketu Estuary maritime marsh spawning habitat. This could also include the purchase of lowland farmland as it becomes available and for its conversion into productive wetland habitat that is in connection with those drains. On-going additional and much more significant sponsorship is therefore also sought by BOP Game Fishing Charters from all avenues, for the purchase of lowland farmland as it becomes available and that is adjacent to Maketu Estuary and to Kaituna Road, Ford Road and Pa Road drains and to their tributaries; as well as for the drains and lowlands on the western side of the lower Kaituna River.

Land purchased could create a Wetland Park as has been noted by Western Bay of Plenty District Council and by Bay of Plenty Regional Council. Land will be excavated, be contoured to promote fresh water movement through parallel deep V canals, and will be planted in raupo to purify water that could also be carrying treated effluent runoff. This will create ideal habitat for galaxies species, for tuna and for bullies, and so could create maximum production of whitebait and tuna elvers to seed maximum potential local inshore coastal fisheries commercial production increase, towards a level that had potentially previously existed before any productive wetlands were drained. It would also create and demonstrate a productive use for treated effluent for others to follow and so could lead to less pollution of our coastal waters by councils.

My previous 24 years of recorded personal inventive commitment towards making all of this this happen, is demonstrated in accompanying copy letters in support of this funding application. I now want your financial support please to help me make this occur.

Summary

Maritime marsh galaxies spawning habitat that had used to exist in Maketu Estuary can I believe now best be replanted as soon as the Kaituna River is reintroduced to Maketu Estuary. When silt-laden Kaituna River flood flows are again moving through Maketu Estuary, established maritime marsh will once again trap sediment and will build up its base to its previous height, and so it will again provide ideal galaxius spawning habitat that is above all but high spring tides. We will then be able to witness a rebuilding of potential inshore coastal fisheries commercial production on a large scale.

I do seek funding for the replanting of maritime marsh in the upper Maketu Estuary as soon as is possible. I will be grateful for your support for my funding application please. I would like to be able to employ a large team of individuals to re-plant maritime marsh in 1 meter quadrants over the entire upper Maketu Estuary shallows on low tides to get that maritime marsh established as soon as the river is reintroduced.

I would be pleased on a Saturday at low tide to demonstrate to anyone who wants to see first-hand the extent of the work that I am proposing on the

upper Maketu Estuary mudflats, to recreate maritime marsh galaxius spawning habitat that had used to be there before Kaituna River flow was removed from Maketu Estuary.

I believe that there is currently sufficient fresh water flow entering Maketu Estuary through No. 1 Pumping Station to support the re-establishment of maritime marsh in that immediate area. When Kaituna River flow is reintroduced to Maketu Estuary through Papahikahawai Channel this could maintain more water depth in Maketu Estuary and so could make the job more difficult. Trial plantings that had been done by DOC well over a decade ago in the vicinity of Maketu Road and No. 1 Pumping Station have all been successful.

I recommend that maritime marsh removed from the back of Maketu Estuary Spit at its widest point to the east of Papahikahawai Channel, could be carried towards the back of Maketu Estuary and nearest to No. 1 Pumping Station and could be replanted in one meter quadrants on mudflats that are exposed at low tide.

I recommend that a path best traversed on the way up the estuary towards Ford's Twin Cuts when that area is replanted, could be closer to the maimais than to Papahikahawai Island to avoid knee deep mud. I have with spade and pack planted many plants over numerous low tides after proposing same within Maketu Taiapure Committee as a trial, but it is a big job on a big area for one man to complete and there is too much salt water there at present anyway so plants did not survive. It does not pay to linger as I had water up to my chest at one stage on a return trip to Maketu. There is about a 3 to 4 hour window of opportunity on a low tide. This may not be the case when the Kaituna River has been returned to Maketu Estuary and a boat may need to be used.

I believe that the more replanting of maritime marsh that does occur in the upper reaches of Maketu Estuary where it was previously recorded before the Kaituna River was removed from the estuary, then the more quickly that we could rebuild potential local inshore coastal fisheries commercial production, with potential Kaituna River and tributaries galaxius and tuna populations that could be re-created when the river is returned to the estuary.

There could be obvious spin-offs for sea birds and for fishermen and for BOP fisheries exports and so a greater public desire for more wetlands could be created. I seek initial funding for coordinating the purchase of packs, spades, wetsuit boots and professional labour to complete the job. I invite your interest in my long studied opinion about how we could potentially and significantly increase local inshore coastal fisheries commercial production and related commerce, and overseas exchange earnings.

I believe that Maori now own at least 35 percent of all fisheries quota. With more treaty settlements pending Maori could end up with an even more significant portion of that asset. The more that we can grow the asset the better for everyone. I believe that New Zealand could best utilise to its

greatest advantage, the recreation of productive fresh water wetlands to enhance coastal inshore and freshwater fisheries commercial production, and that we could generate enormous commerce and sport-fishing and sustenance-fishing opportunity. An enhanced and expanded coastal fishery could also provide enormous revenue creation potential opportunity for Maori and for non-Maori as commerce expanded around it.

Treated effluent overflow could be used to significantly increase inanga, kokopu, bully and tuna growth and so production from fresh water wetlands recreated. That could in turn create an enormously productive coastal inshore commercial fishery with inevitable spin-offs for Maori, while simultaneously also significantly reducing nutrient loading of our waterways.

I believe that we can now start to appreciate the financial significance of rebuilding wetland habitats to grow inshore coastal fisheries commercial production to what it had potentially been, by looking at the past and how we changed that situation from where vast coastal ecosystems and fisheries food chains had started from coastal fresh water wetland habitats. Enormous shoals of galaxius and tuna elvers would have run up open waterways to inland lakes but 80% of galaxius had lived in wetlands within a few kilometres of the coast. 6,000 hectares of previously existing wetlands in the Kaituna River catchment alone would have started enormous food chain production.

It follows that there is now a financial incentive for Government and for District Councils and for Regional Councils and for Maori to create wetlands, and so in turn to re-create the significant and very exportable coastal inshore commercial fisheries production that had potentially existed before coastal wetlands were drained. Fresh water wetlands could be made to be even more productively employed by also lowering nutrient and bacteria levels in effluent and in run-off before it reached the ocean. Nutrient loading of waterways could be decreased, while inanga and kokopu and tuna production in those wetlands could simultaneously be increased, with a subsequent increase in coastal inshore commercial fisheries food chain production.

Feeding wetlands effluent has the potential to make them even more productive than they ever had been. Raupo which Inanga were recorded by Graham and by McDowall by inference to prefer to live in; could perhaps also be harvested by barge for stock feed and to enhance raupo growth rates and so oxygen conversion from wetlands created. All farm drains could I believe now best be made into raupo filled fresh water fish habitat creating, water purifying, effluent treating ecosystems, that are in connection with and so significantly rebuilding inshore coastal fishery commercial production.

Mr. David H. Graham, a Marine Fisheries Investigation and Biological Station Biologist began a lifelong study of New Zealand fishes in 1897 which he later recorded in a book entitled: ‘The Treasury of New Zealand Fishes’. I quote: “Inanga will live in large areas of very slowly moving water, even in the most stagnant, swampy places that are growing raupo, rushes and toetoe grass, but there is always an outlet to a creek or river.”
There is now potential at Maketu to demonstrate the creation of enormous

potential wealth for Maori and for New Zealand, by recreating wetlands and so demonstrating the creation of a very productive inshore coastal commercial fishery and a land-based commercial tuna fishery, which could set the scene for nationwide action to increase overseas exchange earning potential. Treated effluent could now also be seen to be a valuable commodity which could be used to increase fresh water inanga, kokopu, bully and tuna production.

This is an inexpensive and easy solution as I have continued to describe for over 20 years. My initial intention is to flood a significant portion of low lying farmland upstream of Maketu Estuary that will be contoured to provide ideal habitat for inanga, kokopu, bully and tuna. They would then spawn in Maketu Estuary and start inshore coastal commercial fisheries food chains, which could by example then set the scene for enormous potential expansion of this countries inshore coastal commercial fisheries production and overseas exchange earnings. This could be most beneficial for Maori because of the joint ownership of that fishery.

Land based reclaimed productive wetland drained for agricultural production, is I believe worth far less to this country in overseas exchange earnings than potential inshore coastal fisheries commercial production could be. We have to actively promote sales of butterfat amidst considerable and debatable health consequences to the consumer and to the environment, whereas we cannot ever meet the overseas demand for coastal fish species and especially for snapper.

I believe that there is now enormous potential for Regional and District Councils and for Government to either purchase or lease suitable land for environmental enhancement, to create public wealth in a region through potentially increased coastal inshore commercial fisheries production. Maketu Estuary which is currently largely devoid of fish life, could I believe provide an ideal proving example of a potential increase in fisheries production, because any change to the fishery in the immediate vicinity of Maketu Estuary could easily be monitored. There is currently no commercial fishery in the area.

We could start by contouring and reflooding lowland bordering Maketu estuary that is currently farmed by a Te Arawa Lakes Trust sharemilker. Te Arawa Lakes Trust could be paid by BOP Regional Council, by WBOP District Council or by Government's Biodiversity Condition Funding or its equivalent, and at a similar or better rate to their current earnings from their land, to farm inanga, kokopu, bully and tuna, or if they preferred Te Arawa Lakes Trust could sell or lease their land to BOP Regional Council, WBOP District Council or to Government, for the purpose of increasing coastal inshore commercial fisheries food chain production, while also purifying effluent and farm run off.

Whitebaiting in and around Maketu Estuary and the Kaituna River could be severely restricted or could be completely banned, so as not to detract from an experiment to judge a potential increase in inshore coastal fishery commercial production, and so inevitably a regional stimulation of wealth by recreating coastal food chains that had used to exist. A.H. Hefford (1927):

“The amount of Whitebait devoured by fish is a very small item indeed, as against the huge number that whitebait netters take from the stream.”

Inanga prefer to spawn in maritime marshland and there is already some maritime marshland in Maketu Estuary, part of which is owned by Red Barker and by Te Arawa Lakes Trust, and there is also some on the back of the spit. Extensive maritime marshland that used to exist before fresh water flushing flood flows were removed from the estuary to cater to large areas of reclaimed and rateable farmland upstream could be replanted.

BOP Regional Council has collected considerable rates over the years from farmers, who have benefited from their drainage schemes, but this has been at the expense of Kaituna River and Maketu Estuary ecosystems, and so it has impacted on inshore coastal commercial fisheries food chains. It was therefore done at the expense of potential inshore coastal fisheries commercial quota. In fact wetlands that used to surround Maketu Estuary and stretch inland for miles (6,000 hectares) are now having water drained and pumped from them continuously, so removing their natural productive habitat from this region’s lost, but still with potential to be recreated, inshore coastal fisheries commercial production and from its freshwater tuna fishery.

Considerable and potential inshore coastal fisheries commercial production used to exist before most of this countries coastal lowland and swamps were drained. The parents of 80% of the whitebait that used to exist and that no doubt contributed to an extensive coastal ecosystem, used to live within a few kilometres of the coast.

We are inevitably witnessing an increase in human population near to our coastline. Sewerage that is currently being partially treated and then pumped into the ocean to promote the growth of sea lettuce and bacteria, could instead be further treated and purified in wetland habitats. The greater the amount of habitat that is created then the greater its purification potential and also the more inanga, bully, tuna and kokopu production that could also re-created.

A successful demonstration of a created increase in local inshore coastal fisheries commercial production, could lead this country to create significant future overseas exchange earnings from similar works on all suitable coastal lowlands within a few kilometers of the coast. It could also include the creation of permanent access for galaxius species and for tuna to and from inland lakes and rivers that have been isolated from the reach of these species by developments including hydro dams.

Hydro dams blocking koaro access from the sea to Lake Taupo is a classic example, and did close whitebait canneries on the Waikato River when Lake Arapuni Dam was built. Any hydro development on the Kaituna River would have a similar effect on already severely depleted galaxius and tuna populations and so on an enormous potential increase in coastal inshore commercial fisheries production, as soon as Maketu Estuary maritime marsh spawning habitat is re-created. Fish ladders and deflective screens could

therefore I believe best be a prerequisite to any water rights being granted in future for the Kaituna River.

Wetlands are important for providing habitat for fish to live, spawn and rear their young. Wetlands provide adult habitat for the commercially significant galaxius species that are the parents of whitebait and that spawn at the confluence of fresh and salt water, and so contribute to inshore coastal commercial fisheries food chain production. Wetlands also provide habitat for tuna which are part of those food chains. Lakes Rotoiti, Rotoma and Rotorua and their tributaries do provide significant galaxius and tuna habitats, but there is no longer a natural connection to an area of significance in the upper Maketu Estuary for galaxius species to spawn as there had previously been, before the Kaituna River was removed from Maketu Estuary. Less galaxius production equates to less food availability for tuna in those fresh water habitats.

I suggest that areas adjacent to Maketu Estuary that are suitable to become wetland immediately, are the lowlands adjacent to Maketu Rd. and to Kaituna Rd. and to the Pa Rd. drain, and to the Kaituna Wetland and all drains and lowlands adjacent to the lower Kaituna River, and including the extensive wetlands throughout Papamoa, and including ponds that have been created by excavations there to gain sand for developments, and including reinstating the natural water course that has been diverted from Papamoa under the railway line and into Tauranga Harbour, at the expense of Papamoa wetland galaxius and tuna populations that had previously existed.

All of these wetlands could be purchased as they become available by BOP Regional Council, WBOP District Council, Government, or by private funding, and they could all form part of an extensive recreational reserve, be stripped of buildings and fences and be excavated to provide 2 meter deep parallel V drains suitable for inanga, tuna, bully, kokopu, raupo and water movement, and less suitable for exotic predatory species like trout. Drains created and planted in raupo could be flooded by the removal of pumping stations numbered 2 and 3 and upwards to provide wetland habitat. Kaituna River water could be siphoned into the head of drains to create water movement through those drains. Farm drains throughout the Kaituna River catchment could be purchased by BOP Regional Council, WBOP District Council, Government, or by private funding as they become available, and they could be widened and planted in raupo to further create ideal galaxius and tuna habitats.

I believe that a potential wetland reserve could best immediately be created between the eastern motorway, the Kaituna River stop-bank and the Maketu Estuary stop-bank.

Kaituna River flood water could be introduced to the area immediately below the eastern motorway bridge, by over-topping a lowered section of the Kaituna River stopbank at that point, or Kaituna River water could be siphoned into the area. The wetland could in turn drain into the lower Kaituna River at the site of the No.2 pumping station as well as into Maketu Estuary

near to established maritime marshland that is near to the existing flap-gate structure, where the Kaituna Rd. drain bends towards No. 1 pumping station. No. 1 pumping station could then instead be made to pump water under Maketu Road and into Te Arawa Wetland created.

Fill for the stop-bank that will be built adjacent to the motor-way could be taken at less cost from the adjacent area, as well as from throughout the course of the Kaituna Rd. Fords Rd. and Pa Rd. drains. These widened drains could then create additional deep water raupo filled wetlands that could supply surface water to further wetlands that could also be created, and all could be purifying only partially treated AFFCO Rangiuru effluent that is currently being spilled into the lower Kaituna River and so raising E. coli and Enterococci levels significantly. It could instead be purified in an extensive raupo filled wetland on AFFCO lowland to the south of State Highway 2, and then it could be siphoned under State highway 2 and into the Pa Rd. drain.

Wetlands that could be created by excavating and contouring properties that are adjacent to Kaituna Rd, Fords Rd. and Pa Rd. drains as they become available for purchase or for lease, could drain and could be pumped by No. 1 pumping station into lowland to the east of Maketu Rd. to enhance that former wetland habitat, and before draining back under Maketu Rd. through existing culverts and into Maketu Estuary adjacent to the maritime marsh galaxius spawning habitat that currently exists there.

Similar works on the other side of the Kaituna River could purify effluent run-off from Te Puke Borough sewerage treatment plant, so lowering E. coli and Enterococci levels before effluent entered the Kaituna River and so also Maketu Estuary.

AFFCO Rangiuru and Te Puke Borough could both very easily create extensive raupo filled wetland water purification and habitat providing systems, in addition to the treatment facilities that they already have, and so the current Kaituna River pollution load from their input could be significantly reduced. Other population groups within WBOPDC as well as Tauranga City Council could take similar steps to reduce the nutrient loading of their effluent, and to create inanga, kokopu, bully and tuna habitats.

These areas that could be created, as well as wetlands that could be recreated between the Eastern Motorway, the Kaituna River and Maketu Estuary stop-banks, could all be seeding local inshore coastal fisheries commercial production while treating effluent and lowering E. coli and Enterococci levels significantly, and so therefore may potentially attract experimental funding from all of the sources that I have previously described in writing to BOP Regional Council as Central Government, Ministry of Fisheries, DOC, WBOP District Council, Tauranga City Council, Rotorua District Council, Forest and Bird, Fish and Game, commercial fishing companies and corporations who stand to gain from fisheries production increases, World Wildlife Fund, Pub Charity, Lottery Grants Board, environmental groups and private entrepreneurs etc. Funding potential exists with the four Councils involved in the Management Strategy as well as with

Government Biodiversity Condition Funding, and with potential company and corporate sponsorship for naming rights, and with funding applications to the World Wildlife Fund, Banrok Station, Microsoft Corporation and many others.

Central Government and NIWA Taihoro Nukurangi, Customary Fisheries and Benthic Ecology Te Kuwaha – Maori Research and Development Group, could I believe be most interested in any potential increase in our very exportable coastal inshore commercial fisheries production.

With regard to a proposed Kaituna River and Maketu Estuary Management Strategy Working Party forecast of aiming to re-create 100 hectares of Wetland over a 10 year period, as being an achievable goal in our Working Party's efforts to re-create something of the natural habitat that used to exist before land drainage occurred, and before the Kaituna River Drainage Scheme destroyed productive wetlands for pastoral farming, so stopping those wetlands from creating food chains which had built the potential production of the local inshore coastal fishery, I as Chairman of the Kaituna River and Maketu Estuary Management Strategy History Focus Group, do believe that we could now instead best aim to rebuild the production and the significant export potential of the inshore coastal Bay of Plenty commercial fishery as soon as possible. I also believe that we need to raise our expectation towards re-creating a more significant area of the previously existing wetland habitat.

With an 1840 estimate of 6,167.25 hectares of wetland not counting lakes in the Kaituna River catchment, I believe that the proposed 100 hectares of potential wetland that may be recreated over 10 years as has been proposed by BOP Regional Council, does currently represent the Working Party only intending to re-create less than .06% of the lost potential coastal inshore commercial fisheries production, and so the export potential of a significant part of the Bay of Plenty fishery.

If we consider the monetary value alone of the Bay of Plenty's potential inshore coastal fisheries commercial production that could now easily be recreated, simply by reflooding lowlands in isolation from pumping stations, and by using abundant Kaituna River flow that is carrying a pollution load to the coast, and which could easily be settled and oxidised in those wetlands, while having it’s E. coli and Enterococci levels reduced by galaxius and by raupo, then 100 hectares proposed thus far to be re-flooded over 10 years, is a very short sighted, inadequate and inappropriate aim I believe.

In the WBOPDC Draft Long Term Plan for the future of Maketu, Gillian Payne, WBOPDC Policy and Monitoring Manager, has written that the purchase of a wetland park would remain a priority, and that the action to investigate the purchase of land for the development of a Sub-regional Wetland Park be confirmed by staff, given reference to future sources of funding for an investigation into local coastal fisheries production.

We as a pioneering county drained those wetlands to produce butterfat and

farm produce for export, but the potential coastal inshore commercial fisheries production that we destroyed in the process, does I believe have vastly more export potential and so overseas exchange earning potential, and so this must now I believe be an over-riding consideration.

This is a chance to create and measure an example of increased coastal inshore commercial fisheries production in one area that could lead to a national action to re-create an enormous future overseas exchange earning potential, from the export of snapper and other coastal inshore commercial fish species that are further up the food chains from those wetlands.

Aiming at 100 hectares over 10 years is well short of the mark I believe, as a consequence of the significant monetary value to Maori and to this region and to this country, of the coastal inshore commercial fisheries production and export revenue potential and sustenance fishing potential, and also the potential tourism opportunity that could now be recreated.

I suggest that we do instead look at 6,167.25 hectares of wetland that used to exist, and that we now take all possible initiatives to recreate as much of it as possible and as soon as is possible, in conjunction with Maketu Estuary maritime marsh spawning habitat. The most obvious place to start is with at least 100 hectares of Te Arawa Lakes Trust wetland to the east of Maketu Rd. and then Te Arawa can lead the way to creating enormous ongoing wealth for Maori people.

As an aside I do wonder how long BOP Regional Council is going to be prepared to let Auckland City Council dump its partially treated effluent into the Bay of Plenty via the Auckland current. An alternative would be for Auckland to create its own wetland water purification and habitat creating systems, and so the Auckland region may also be interested in helping to fund a Bay of Plenty experiment.

Don Paterson
Maketu Taiapure Committee
Chairman, History Focus Group, Kaituna River & Maketu Estuary Management Strategy Working Party
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Background:

Recommendations for **Maketu Taiapure Committee of Fisheries Management** consideration and potential adoption and enforcement within Maketu Taiapure boundaries: The Ocean will be farmed as opposed to just harvested, and harvesting techniques will be compatible with the maintenance of a population biomass. Maximum coastal fisheries production will result from time proven farming practices as follows:

1. All species of fish will be protected from commercial harvest while spawning.
2. Set nets, gill nets, tuna longliners, purse seiners, trawlers and Danish seiners will be kept outside a 12 mile limit and away from all Islands and away from all reefs.
3. Inshore coastal fisheries food chains will be re-built from the bottom up with a whitebait population that used to exist. Freshwater adult tuna, inanga, kokopu, koaro and bully habitat and estuarine spring tide spawning habitat will be recreated and reconnected with the ocean.
4. The inshore coastal fishery will be restocked with juvenile whitebait and they in turn will be followed by sprats, pilchards, herrings, scad and the juveniles of the commercial fish species.
5. We will stop killing those juveniles and stopped destroying their habitat as per No. 2 above. This country will achieve maximum coastal fisheries production. Intelligent harvesting techniques will utilize manpower and hooks while catching fish individually in perfect exportable condition.
6. Marine reserves will be established to restock areas that are harvested.
7. Pollution of our coastline in every form will be severely outlawed.
8. Fish will exist in abundance for both commercial and for recreational fishers.
9. The New Zealand 200 mile economic zone will become the greatest and most productive farm in the world; its produce of incredible monetary value to this country's economy.
10. The 12 mile territorial sea will become known as the Fisheries Heritage Protection Zone and in areas close to human population concentration every New Zealand citizen will have a chance to enjoy the best and most productive recreational salt water fishery in the world.
11. The rest of the Fisheries Heritage Protection Zone will be available commercially and at considerably more economic value to this country than we are currently able to gain from over-harvesting depleted fish stocks by using methods that are destructive to habitat and that damage and reduce the value of the catch.

Kindest regards

Don Paterson
Maketu Taiapure Committee
CLM; HbT, SRF; SNTR
NZ Chartered Natural Therapies Practitioner NT1634

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----- Original Message -----
From: Don Paterson
To: Elaine Tapsell
Cc: willie.emery@gmail.com ; clemwynyard@slingshot.co.nz ; bigharry@kinect.co.nz ; Pia Bennett ; Roku Mihinui

Sent: Thursday, October 06, 2011 5:33 PM
Subject: Project Proposal to Kotahitanga

Hi Elaine

I had briefly mentioned at our the last meeting a project proposal that I do have on hold until the Kaituna River is returned to Maketu Estuary: That is the replanting of extensive maritime marsh inanga spawning habitat as had used to exist within Maketu Estuary boundaries, so as to enhance local inshore coastal fishery production and local recreational/sustenance fishing opportunity. Te Arawa people would I believe stand to gain the most from this project.

I have another project in mind that I would like Te Arawa Kotahitanga to consider funding me for. That is to research, plan, to attract finance for, and to coordinate the purchase and construction of lowland wetlands that are, or that could again be tributary to Maketu Estuary maritime marshland inanga spawning habitat that currently exists, and that could be greatly enhanced once continuous Kaituna River flow has been returned to Maketu Estuary.

I have already demonstrated my commitment over 4 decades to see the Kaituna River returned to Maketu Estuary and I have helped to make this happen with some strategic planning, like the meeting in my Maketu home with Bill Bayfield and others from EBOP which led to the public consultation process, which led to the joint council committee supporting the Kaituna River and Maketu Estuary Management Strategy recommendation to return the Kaituna River to Maketu Estuary.

I would also like to see previously existing lowland wetlands that have been having water pumped from them for farmland, purchased from willing sellers and in conjunction with the eastern arterial construction; be excavated and contoured to accommodate raupo plantings and to support movement and purification of Kaituna River water, while simultaneously providing inanga, tuna, kokopu, and bully habitat to seed local inshore coastal fisheries production, and that is less attractive to predatory trout than would be open waterways.

This proposed project will take a considerable amount of my professional time and effort to achieve. I would like $10,000 seed funding from Te Arawa Kotahitanga with their written support for the project to get me started. I believe that I should be able to make things happen from there. Please forward this proposal to Kotahitanga for me.

Kindest regards

Don Paterson
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----- Original Message -----
From: Don Paterson
To: k.maxwell@niwa.co.nz
Sent: Friday, June 25, 2010 4:46 PM
Subject: Potential inshore coastal fishery production increase

Kimberly Maxwell MSc, BSc
Customary Fisheries and Benthic Ecology Technician
Te Kuwaha – Maori Research and Development Group
NIWA Taihoro Nukurangi

Hi Kimberly

We met recently at a Maketu Taiapure Committee of Fisheries Management meeting at Maketu. I now invite your Groups interest in my long studied opinions about how we could potentially and significantly increase inshore coastal fisheries production.

I believe that Maori now own at least 35 percent of all fisheries quota and with more treaty settlements pending; Maori could end up with an even more significant portion of that asset.

I believe that New Zealand could best utilize the re-creation of fresh water wetlands to enhance inshore coastal commercial fisheries production, and that we could generate enormous commerce and sport-fishing and sustenance-fishing opportunity. An enhanced coastal fishery could provide enormous revenue creation potential opportunity for Maori, and for non-Maori, as commerce expanded around it.

Treated effluent overflow could I believe be used to significantly increase fresh water inanga, kokopu, bully and tuna growth, and so production from fresh water wetlands that could be re-created could be increased, which could in turn create an enormously productive coastal inshore fishery with inevitable spin-offs for Maori, while simultaneously also significantly reducing nutrient loading of waterways.

I believe that we can now appreciate the financial significance of rebuilding habitat to grow coastal fisheries production to what it had been, by looking at the past and how we changed the situation, from where vast coastal ecosystems and fisheries food chains were starting from coastal fresh water wetland habitats. Vast shoals of galaxies had run up open waterways to inland lakes but 80% of them had lived within a few kilometres of the coast.

Douglas (1860); “Those Whitebait were created by nature to fill a large gap somewhere in the world of waters.”

Clark (1899); “The extent of the shoals in the South Island West Coast rivers

at times were incredible. Often, I have seen surface areas several acres each in extent, covered some inches in depth, with these fry used as topdressing manure. One hopes that the supply will last and be properly fostered to allow sufficient to be left for annual reproduction."

Graham (Prior 1900); "Day after day, week after week, during the spring months shoals of these small fish pursued their way up the river. It was no trouble to catch a bucketful in a few minutes. So plentiful were they that if I received 6d. or 1/- for a bucketful it was considered a good price. They were fed to the fowls and ducks until the eggs had a fishy taste. I can remember my father using Whitebait as garden manure. The supply exceeded the demand."

It follows that there is now a financial incentive for Government and District and Regional Councils, and for Maori to create wetlands, and so in turn to re-create the significant and very exportable inshore coastal fisheries commercial production that had potentially once existed, before coastal wetlands were drained.

Fresh water wetlands could I believe be made to be much more productively employed, by lowering nutrient and bacteria levels in effluent and in run-off before it reached the ocean. Nutrient loading of waterways could be decreased, while inanga, kokopu and tuna production from those wetlands could simultaneously be increased, with a subsequent increase in inshore coastal fisheries commercial food chain production. Feeding wetlands effluent has the potential I believe to make them even more productive than they ever had been.

Raupo which Inanga were recorded by Graham to prefer to live in could perhaps also be harvested by barge for stock feed and to enhance raupo growth rates and so oxygen conversion from wetlands created. (Mr. David H. Graham, a Marine Fisheries Investigation and Biological Station Biologist began a lifelong study of New Zealand fishes in 1897 which he later recorded in a book entitled 'The Treasury of New Zealand Fishes'.)

There is a potential at Maketu to demonstrate the creation of enormous wealth for Maori and for New Zealand, by re-creating wetlands and so demonstrating the creation of significant local in inshore coastal fisheries commercial production, which could then set the scene for nation-wide action. Treated effluent could in future be seen to be a valuable commodity which could be used to increase fresh water inanga, kokopu and tuna production, while simultaneously reducing the amount of nutrient-induced sea lettuce on our coastline.

This is an inexpensive and easy solution as I have continued to describe for over 20 years. My initial intention is to initiate flooding of a significant portion of low lying farmland upstream from Maketu Estuary, to provide habitat for inanga, kokopu and tuna. Galaxius which would feed tuna in wetlands created, would then spawn in Maketu Estuary and start in inshore coastal fisheries commercial production food chains, which could by example then set

the scene for enormous potential expansion of this countries coastal fisheries production and overseas exchange earnings. This could be most beneficial for Maori because of joint ownership of that fishery.

Land based reclaimed lowland agricultural production, is I believe worth far less to this country in overseas exchange earnings potential, than inshore coastal fisheries commercial production could be. We have to actively promote sales of butterfat amidst considerable and debatable degenerative disease health consequences to the consumer, whereas we cannot ever meet an overseas demand for coastal fish species and especially for snapper.

I believe that there is now enormous potential for Regional and District Councils and for Government, to either purchase or to lease suitable land for environmental enhancement, to create public wealth in a region through potentially increasing inshore coastal fisheries commercial production.

Maketu Estuary which is currently largely devoid of fish life, could I believe provide the ideal proofing example of potential inshore coastal fisheries commercial production increase, because any change to the fishery in the immediate vicinity of Maketu could be easily monitored. There is currently no commercial fishery in the area.

We could start by flooding lowland bordering Maketu Estuary that is currently farmed by a Te Arawa Lakes Trust Sharemilker. Te Arawa Lakes Trust could be paid by Environment BOP, or by WBOPDC, or by the Joint Councils who are involved in the Kaituna River and Maketu Estuary Management Strategy, or by Government's Biodiversity Condition Funding or its equivalent, and at a similar or better rate to their current earnings from their land, to farm inanga, kokopu and tuna, or if they preferred, Te Arawa Lakes Trust could sell or lease their land to Environment BOP, or to the Joint Councils who are involved in the Kaituna River and Maketu Estuary Management Strategy, or to Government for the sole purpose of increasing inshore coastal fisheries commercial food chain production, while also purifying effluent and farm run-off.

Whitebaiting in and around Maketu Estuary and the Kaituna River could be severely restricted or could be banned, so as not to detract from an experiment to judge a potential increase in inshore coastal fisheries commercial production, by recreating food chains that used to exist.

Inanga prefer to spawn in maritime marshland and there is already some maritime marshland in Maketu Estuary, part of which is owned by Red Barker and by Te Arawa Lakes Trust. Extensive marshland that used to exist before fresh water flushing flood flows were removed from the estuary, to cater to large areas of reclaimed and rateable farmland up-stream, could now be replanted.

I have with trial plantings now witnessed that there is currently insufficient fresh water flow entering Maketu Estuary through Ford's Twin Cuts to support the re-establishment of maritime marsh in the upper Maketu Estuary, and

before Kaituna River flow is reintroduced to Maketu Estuary through Papahikahawai Channel in two years time. Trial plantings that had been done by DOC well over a decade ago in the vicinity of Maketu Road have however all been successful.

I recommend that maritime marsh could best be removed from the back of Maketu Estuary Sand Spit at its widest point to the east of Papahikahawai Channel, and from opposite Whakue Marae, and that it could then be carried towards the back of Maketu Estuary and be replanted on mudflats that are exposed at low tide, once Kaituna River flow has been reintroduced to Maketu Estuary.

I believe that the more replanting of maritime marsh that occurs in the upper reaches of Maketu Estuary where it had been previously recorded, then the more quickly that we could rebuild local inshore coastal fisheries commercial production, with potential Kaituna River and Rotorua Lakes and tributaries galaxius populations that could be re-created, when the Kaituna River is returned to Maketu Estuary.

There could be obvious spin-offs for sea birds and for fishermen and for BOP inshore coastal fisheries commercial production and exports, and so a greater public awareness and desire for more wetlands could be created, I believe.

I wonder if there could be NIWA Taihoro Nukurangi, Customary Fisheries and Benthic Ecology Te Kuwaha – Maori Research and Development Group Environment Enhancement Funding available, for the purchase of packs, spades, wetsuit boots and labour to complete the job please?

Environment Bay of Plenty has collected considerable rates over the years from farmers who have benefited from their drainage schemes, but this was at the expense of Kaituna River and Maketu Estuary ecosystems, and so was to the detriment of inshore coastal fisheries commercial production, and to recreational and sustenance fishing food chains, and was at the expense of potential fisheries quota.

In fact wetlands that used to surround Maketu Estuary and stretch inland for miles (6,000 hectares) are now having water drained and pumped from them continuously, so removing their natural habitat from this region's potential inshore coastal fisheries commercial production, and from its tuna fishery.

That considerable and potential inshore coastal fisheries commercial production used to exist, before most of this countries coastal lowland and swamps were drained. The parents of 80% of the whitebait that used to exist, and that no doubt contributed to an extensive inshore coastal fisheries commercial production ecosystem, used to live within a few kilometres of the coast.

We are inevitably witnessing an increase in population near to our coastline. Sewerage that is currently being partially treated and then pumped into the ocean to inevitably promote the growth of sea lettuce, could instead be further

treated and purified in wetland habitats. The greater the habitat that is now re-created, then the greater the purification potential and the more inanga, tuna, bully and kokopu production that could also re-created.

A successful demonstration of a re-created increase in local inshore coastal fisheries commercial production, could lead this country to create significant future overseas exchange earnings from similar works on all suitable coastal lowlands within a few kilometers of the coast. This could also include the creation of permanent access for galaxius species and for tuna to inland lakes and rivers that have been isolated from their reach by developments including hydro dams.

Hydro lakes blocking koaro access from the sea to Lake Taupo is the classic example, and did close whitebait canneries on the Waikato River at Tauranganui when Arapuni Dam was built.

Any hydro development on the Kaituna River would have a similar effect on the already severely depleted galaxius and tuna populations, and so on an enormous potential increase in inshore coastal fisheries commercial production, when Maketu Estuary maritime marsh spawning habitat is re-created. For this reason I believe that fish ladders and deflective screens could best be a prerequisite to any future water rights being granted for the Kaituna River.

Wetlands are important for providing habitat for fish to live, spawn and rear their young. Wetlands provide adult habitat for the commercially significant galaxius species that are the parents of whitebait, and which spawn at the confluence of fresh and salt water, and so they contribute to inshore coastal fisheries commercial production food chains. Wetlands also provide habitat for tuna and for bullies which are part of those food chains. Lakes Rotoiti, Rotoma and Rotorua and their tributaries provide significant galaxius and tuna habitats, but there is no longer an area of significance in the upper Maketu Estuary for galaxius species to spawn as there had previously been.

I suggest that other areas adjacent to Maketu Estuary that are suitable to become wetland habitat immediately, are the lowlands adjacent to Maketu Road and to Kaituna Road and to the Pa Road Drain, and to the Kaituna Wetland, and to all drains and lowlands adjacent to the lower Kaituna River, and including the extensive wetlands throughout Papamoa, and including ponds that have been created by excavations to gain sand for developments there, and including the water course that has been diverted from Papamoa under the railway line and into Tauranga Harbour at the expense of the Papamoa wetlands galaxius and tuna populations that had previously existed.

All of these wetlands could be purchased as they became available by EBOP, or by WBOPDC, or by the Joint Councils who are involved in the Kaituna River and Maketu Estuary Management Strategy, or by Government, or by any other interested body. They could all form part of an extensive recreation reserve, be stripped of buildings and fences and be excavated to provide a 2 meter depth suitable for inanga and for raupo, and less suitable to

exotic predatory species. They could be planted in raupo and be re-flooded by the removal of pumping stations numbered 2 and 3 and upwards to provide habitat for galaxius species and for tuna.

Farm drains could also be purchased by EBOP, or by WBOPDC, or by the Joint Councils who are involved in the Kaituna River and Maketu Estuary Management Strategy, or by Government or by any other interested body, throughout the Kaituna River catchment as they became available, and they could be widened and planted in raupo to further create ideal galaxius and tuna habitat.

I believe that a potential wetland reserve could best be created between the proposed Rangiuru Industrial Park, the proposed Eastern Arterial Link, the Kaituna River stop-bank and the Maketu Estuary stop-bank.

Kaituna River flood water could be introduced to the area immediately below a proposed Eastern Arterial Link motorway bridge, by over-topping a lowered section of the Kaituna River stop-bank at this point. The wetland could in turn drain into the lower Kaituna River at the site of Number 2 pumping station, as well as into Maketu Estuary from No.1 pumping station and via Te Arawa Wetland, as well as at the existing flap-gate structure where the Kaituna Road drain last bends towards Number 1 pumping station.

Fill for the stop-bank that would be built adjacent to the motor-way and adjacent to the proposed Rangiuru Industrial Park, could be taken at less cost from the adjacent area, as well as from throughout the course of the Kaituna Road, Fords Road and Pa Road drains. These widened drains could then create additional purpose built and raupo filled wetlands, that could supply surface water to further wetlands created, and that could also further purify only partially treated AFFCO Rangiuru effluent that is currently being dumped into the lower Kaituna River, so raising E. coli and Enterococci levels significantly. AFFCO effluent could now instead first be further purified in a purpose built raupo filled wetland on AFFCO lowlands, and then siphoned or pumped under State Highway 2 and into Pa Road drain.

Wetlands that could be created by excavating properties that are adjacent to Kaituna Road, Fords Road and Pa Road drains, as they become available for purchase or for lease, could drain into lowlands to the east of Maketu Road to enhance that former wetland habitat, and before draining under Maketu Road and into Maketu Estuary adjacent to the maritime marsh inanga spawning habitat that currently exists.

Similar works on the other side of the Kaituna River could purify effluent run-off from Te Puke Borough sewerage treatment plant, so further lowering E. coli and Enterococci levels before that effluent entered the Kaituna River via the Waiari River, and so also Maketu Estuary. Te Puke Borough sewerage treatment plant is currently insignificant and is a token gesture of what it could ideally be, I believe. The wetland appears dry and effluent from the plant appears to be entering a drain leading into the Waiari River.

AFFCO Rangiuru and Western Bay of Plenty District Council for Te Puke Borough, could both very easily create extensive raupo filled wetland water purification and habitat providing systems, in addition to the treatment facilities that they already have, and so the current Kaituna River pollution load from their input could be significantly reduced. Other population groups within Western Bay of Plenty as well as Tauranga City could take similar steps to purify their effluent and to create inanga, kokopu and tuna habitat to increase inshore coastal fisheries commercial production food chains.

These areas that could be created, as well as a wetland that could be re-created between the proposed Rangiuru Industrial Park, the proposed Eastern Arterial Link, the Kaituna River and Maketu Estuary stop-banks, could all be seeding local inshore coastal fisheries commercial production, while treating effluent and lowering E. coli and Enterococci levels significantly, and so therefore may potentially attract experimental funding from all of the sources that I have previously described in writing to Environment Bay of Plenty, as Central Government, Ministry of Fisheries, Department of Conservation, Western Bay of Plenty District Council, Tauranga City Council, Rotorua District Council, Forest and Bird, Fish and Game, commercial fishing companies and corporations who stand to gain from fisheries production increases, World Wildlife Fund, Pub Charity, Lottery Grants Board, environmental groups and private entrepreneurs, Government Biodiversity Condition Funding, and with potential Company and Corporate sponsorship for naming rights, and with funding applications to the World Wildlife Fund, Banrok Station, Microsoft Corporation and many others.

Central Government and NIWA Taihoro Nukurangi, Customary Fisheries and Benthic Ecology Te Kuwaha – Maori Research and Development Group, could now be most interested in any potential increase in our very exportable local inshore coastal fisheries commercial production at Maketu, which could initiate the future creation of enormous national wealth.
With regard to a proposed Kaituna River and Maketu Estuary Management Strategy Working Party forecast, of aiming to re-create 100 hectares of Wetland over a 10 year period as being an achievable goal in our Working Party's efforts to re-create something of the natural habitat that used to exist, before land drainage occurred and before the Kaituna River Drainage Scheme destroyed wetlands for pastoral farming, so stopping those wetlands from creating food chains which had built the potential of the local inshore coastal fisheries commercial production, I as Chairman of the Kaituna River and Maketu Estuary Management Strategy History Focus Group, do believe that we could now instead aim to rebuild the production and the significant export potential of this section of the Bay of Plenty inshore coastal fisheries commercial production, if we raise our expectation towards re-creating a more significant area of the previously existing wetland habitat.

With an 1840 estimate of 6,167.25 hectares of wetland not counting lakes in the Kaituna River catchment, I believe that the proposed 100 hectares of potential wetland that may be re-created over 10 years as has been proposed by Environment Bay of Plenty, does currently represent the Working Party only intending to re-create less than .06% of the lost local inshore coastal

fisheries commercial production and so export potential of a significant part of the Bay of Plenty fishery.

If we consider the monetary value alone of the Bay of Plenty's local inshore coastal fisheries commercial production potential for Maori, that could now easily be re-created simply by re-flooding lowlands in isolation from pumping stations, and by using abundant Kaituna River flow which is carrying a pollution load to the coast, and which could now easily instead be settled and oxidized in those wetlands while having it's E. coli and Enterococci levels reduced by inanga and by raupo, then the 100 hectares proposed thus far to be re-flooded over 10 years is a very short sighted, inadequate and inappropriate aim I believe.

In the Western Bay of Plenty Draft Long Term Plan for the future of Maketu, Gillian Payne, WBOPDC Policy and Monitoring Manager, has stated that the purchase of a wetland park would remain a priority, and that the action to investigate the purchase of land for the development of a Sub-regional Wetland Park be confirmed by staff, given reference to future sources of funding for an investigation into local coastal fisheries production.

We as a pioneering County drained those wetlands to produce butterfat and farm produce for export, but the local inshore coastal fisheries commercial production potential that we destroyed does have vastly more export potential and so overseas exchange earning potential, and so this must now be an over-riding consideration I believe.

This is our chance to create an example of an increase in local inshore coastal fisheries commercial production in our area that could lead to a national action to re-create an enormous future overseas exchange earning potential, from the export of snapper and other inshore fish species that are further up the coastal food chains from those wetlands.

Aiming at 100 hectares over 10 years is well short of the mark as a consequence of the significance of the monetary value to Maori, and to this region and to this country, of the potential local inshore coastal fisheries commercial production exports and tourism opportunity that could now easily be re-created.

I suggest that NIWA Taihoro Nukurangi, Customary Fisheries and Benthic Ecology Te Kuwaha – Maori Research and Development Group, do instead look at 6,167.25 hectares of wetland that used to exist, and do take all possible initiatives to recreate as much of it as possible and as soon as is possible. The most obvious place to start is with at least 100 hectares of Te Arawa Lakes Trust Wetland to the east of Maketu Road, and then Te Arawa Lakes Trust can lead the way to creating enormous wealth for Maori people.

As an aside I do wonder how long Environment Bay of Plenty is going to be prepared to let Auckland City dump its partially treated effluent into the Bay of Plenty via the Auckland current. An alternative would be for Auckland to create its own wetland water purification and habitat creating systems and so

the Auckland region may also be interested in helping to fund a Bay of Plenty experiment.

Kindest regards

Don Paterson
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From: Don Paterson
To: Matt Cowley
Sent: Wednesday, November 03, 2010 6:45 PM
Subject: Maketu Estuary maritime marsh

Hi Matt

Thanks for the email. I had already asked Julian Fitter by email if the Maketu Ongatoro Wetlands Group would like to be involved with replanting maritime marsh throughout the upper Maketu Estuary but he declined their involvement preferring instead to maintain a focus on pest control and weed eradication on the spit. I believe that Julian is as yet unaware of the significance that Maketu Estuary maritime marsh galaxius spawning habitat could have on Maketu Estuary and to inshore coastal fishery food chains in connection with the Kaituna River.

I have applied to Te Arawa Lakes Trust for financial assistance and I am awaiting their reply. I do also intend to apply to EBOP for Environmental Enhancement funding which would allow me to employ contract labour to complete the job asap so that the maritime marsh is well established when the Kaituna River is returned to Maketu Estuary in two years time through Papahikahawai Channel, which Council has I believe confirmed to be the preferred rediversion option following 20 plus years of consultation with the community, as well as through Fords Twin Cuts.

I believe that the most likely erosion that could be caused near to Papahikahawai Island by the rediversion, could be where fill had been dug from the estuary to build the existing Papahikahawai Island stop-bank. This has left a deep mud channel which could possibly be flushed out by flood waters from the back of the estuary unless it is dammed.

I would appreciate some assistance with Environmental Enhancement funding application if you are interested, or if you know someone else within EBOP who could assist me please. I have attached an introductory page for your information.

Kindest regards

Don Paterson
Maketu Taiapure Committee
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----- Original Message -----
From: Don Paterson
To: Ken Tarboton
Cc: Colin Meadowcroft ; Matt.Cowley@envbop.govt.nz ; Gillian Payne ; Roku Mihinui ; willie.emery@gmail.com
Sent: Thursday, August 05, 2010 7:19 PM
Subject: Ken Tarboton

Hi Ken

Thanks for your reply. I would also like to see EBOP purchase the Kaituna Road, Fords Road and Pa Road drains and the lowlands in their immediate vicinity.

I would like to see those drains widened and lowlands excavated to a depth of 6 feet and be planted in raupo to create ideal habitat for inanga, tuna, kokokpu and bully adults.

I would then like to see Pa Road drain receive treated effluent from AFFCO Rangiuru, once it had been further purified in raupo filled wetlands that could be created on AFFCO lowland south of State Highway 2.

I believe that fill from Kaituna Road, Fords Road and Pa Road drain extension works and from Te Arawa lowlands to the east of Maketu Road, could best be utilised by Transit NZ to help create the 4 lane Eastern Arterial Route. I believe that the Eastern Arterial Route construction could be used as a reason to create extensive wetlands by taking fill.

I believe that similar works could best be undertaken on the western side of the Kaituna River and below the Waiari River confluence, to provide more wetland habitat to further treat and purify Te Puke Borough sewerage before it entered the Kaituna River and so eventually Maketu Estuary.

This work could accommodate the WBOPDC Draft Long Term Plan for the future of Maketu, where Gillian Payne, WBOPDC Policy and Monitoring Manager, has written that the purchase of a wetland park would remain a priority and that the action to investigate the purchase of land for the development of a Sub-regional Wetland Park be confirmed by staff, given reference to future sources of funding for an investigation into local coastal fisheries production.

Maritime marsh galaxies spawning habitat that had used to exist in Maketu Estuary, can I believe now best be replanted as soon as possible and before the Kaituna River is reintroduced to Maketu Estuary, so deepening the estuary and making the job that much more difficult.

When silt-laden Kaituna River flood flows are again moving through Maketu Estuary, then established maritime marsh will again trap sediment and will build up its base to its previous height, and so it will again provide ideal galaxius spawning habitat that is above all but high spring tides. We will then be able to witness a rebuilding of inshore coastal fisheries production.

I do intend to seek EBOP Environmental Enhancement Funding for the replanting of maritime marsh in the upper Maketu Estuary as soon as possible. I would be grateful for your and for your colleague's support for that funding application please. I would like to be able to employ a large team of individuals to plant maritime marsh in 1 meter quadrants over the entire upper Maketu Estuary shallows on low tides, to get that maritime marsh established now before the river is reintroduced in 2 years' time.

Kindest regards

Don Paterson
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----- Original Message -----
From: Don Paterson
To: Julian Fitter
Sent: Friday, June 18, 2010 5:07 PM
Subject: Re: Meeting Papers

Hi Julian

Thank you for your reply. Most of the maritime marsh adjacent to Maketu Road is original, but there were a number of plants transplanted from Maketu Spit when we were originally consulting with the Department of Conservation about returning the Kaituna River to Maketu Estuary about 2 decades ago. The maritime marsh was planted in groups of a few plants on areas that were bare mudflat and they have now grown. An experienced eye can still recognize them when driving past. There were apparently other species with lighter foliage planted as well, and which are now apparently spreading.

EBOP is going to reintroduce the whole Kaituna River flow to Maketu Estuary via Papahikahawai Channel except that Fords Twin Cuts will remain open I

believe. There will be an overtopping weir at Te Tumu that will allow excess flood flows to exit there on a high tide and so prevent the flooding of Maketu Village and Maketu Road and farmland (reclaimed wetland) upstream of Te Tumu, I believe.

The estuary entrance will then be maintained at the eastern end of the beach and the spit will be stabilized naturally by an original and significant Papahikahawai Channel flow, which will re-create original estuary conditions and the deep water anchorage that had previously existed.

If the entrance to Ongatoroirangi Maketu Estuary is forced out at the spit's narrowest point once a significant Papahikahawai Channel flow has been reinstated, then sand which has in-filled the lower estuary will be flushed back out to sea as the mouth migrates back towards the Surf Club, and will rebuild the beach and will stabilize Ongatoroirangi Maketu Estuary Spit, and sand dunes would steadily gain height naturally without being eroded from behind.

We all witnessed this sequence of events last time that the spit was breached by Ford's Twin Cuts flow around the back of the estuary, and without a protective Papahikahawai Channel flow, and after an Appeal Court hearing when I had attempted to stop EBOP from using Ford's Twin Cuts in isolation, and so eroding the back of the toe of the spit and in-filling the lower estuary with sand. We are now watching it happen again as the spit narrows opposite Whakaue Marae and in-fills the estuary on a falling tide. The spit has grown out of proportion as a result and now fills the lower estuary.

I had used to follow EBOP's lead and write Ongatoro, until one evening at a Maketu Taiapure Committee meeting when Clem Tapsell had said that it was an insult to his tupuna to mispronounce his name. I know that I do prefer my sir-name to be spelt correctly with one t and so I decided to make the effort to honor Clem's tupuna by writing Ongatoroirangi.

I therefore compliment the Maketu Ongatoroirangi Wetlands Group on weed eradication, rubbish removal and pest control to date, but planting pohutukawa trees on the spit is not something that I support because it is not a natural habitat for this tree. I do love the trees but I would prefer to see them planted somewhere else in a more natural setting and to let the sand-spit be a natural sand-spit.

Kindest regards

Don Paterson
Maketu Taiapure Committee
CLM; HbT, SRF; SNTR
NZ Chartered Natural Therapies Practitioner

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----- Original Message -----
From: Don Paterson
To: Roku Mihinui
Sent: Monday, July 19, 2010 11:03 AM
Subject: Re: Maketu Taiapure project

Hi Roku

I would be pleased on a Saturday at low tide to demonstrate to any board members who want to see first-hand, the extent of the work that I am proposing in the upper Maketu Estuary to recreate the maritime marsh galaxius spawning habitat that used to be there.

Sediment being carried by the Kaituna River will I expect soon build up the height of the base of the marsh once the river is returned. The sooner that we can get the marsh planted and re-established there, the sooner that this can occur.

Kindest regards

Don Paterson
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NZ Chartered Natural Therapies Practitioner

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From: Don Paterson [mailto:nat.opc@xtra.co.nz]
Sent: Saturday, 17 July 2010 3:43 p.m.
To: Roku Mihinui
Subject: Maketu Taiapure project

Hi Roku

Please find attached my proposal to Te Arawa Lakes Trust for which I am seeking Maketu Taiapure Committee endorsement.

Kindest regards

Don Paterson
Maketu Taiapure Committee
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17 June 2010

Willie Emery
Chairman
Maketu Taiapure Committee

Hi Willie

Copy enclosed for your information as Chair of Maketu Taiapure Committee. I hope for your support for my proposal please.

Kindest regards

Don Paterson
Maketu Taiapure Committee
CLM; HbT, SRF; SNTR
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----- Original Message -----
From: Don Paterson
To: Heidi Britt
Sent: Wednesday, June 16, 2010 5:41 PM
Subject: Re: Coast Care - Maketu Ongatoro Wetlands Group Planting Days

Hi Heidi

Thank you for your email. I may not be able to make it to either of the Sunday planting days below I am sorry.

The Maketu Ongatoroirangi Wetlands Group is a local community group working to look after and conserve the coast and wetlands of the Maketu area and so I invite that groups interest through you please, in replanting of the upper Maketu Estuary mudflats in maritime marsh galaxius spawning habitat, as had previously existed before Kaituna River flow was removed from Maketu Estuary.

I believe that there currently is sufficient fresh water flow entering Maketu Estuary through Ford's Twin Cuts to support the re-establishment of maritime marsh (I have since witnessed this not to be the case on 13/11/10) and before Kaituna River flow is reintroduced to Maketu Estuary through Papahikahawai Channel in two years' time, which will deepen Maketu Estuary and so make the job more difficult. Trial plantings that had been done by DOC well over a decade ago in the vicinity of Maketu Road have all been successful.

I recommend that maritime marsh could best be removed from the back of the

Maketu Estuary Sand Spit at its widest point to the east of Papahikahawai Channel, and it could then be carried towards the back of Maketu Estuary and nearest to Ford's Twin Cuts, and replanted on mudflats that are exposed at low tide and in one meter quadrants.

I recommend that the path best traversed on the way up the estuary could be closer to the Maimais than to Papahikahawai Island to avoid knee deep mud. I have with spade and pack planted 124 plants over 2 low tides last weekend, after proposing same within Maketu Taiapure Committee, but it is a big job on a big area for one man to complete. It does not pay to linger as I had water up to my nipples at one stage on a return trip to Maketu, and so I recommend staying further west on the return trip if starting from Maketu.

I believe that the more replanting of maritime marsh that now occurs in the upper reaches of Maketu Estuary where it was previously recorded, then the more quickly that we could rebuild local coastal fisheries production with potential Kaituna River and Rotorua Lakes and tributaries galaxius populations that could be re-created when the Kaituna River is returned to Maketu Estuary.

There could be obvious spin-offs for sea birds and for fishermen and for BOP fisheries exports and so a greater public desire for more wetlands could be created, I believe.

I wonder if there could be EBOP Environment Enhancement Funding available for the purchase of packs, spades, wetsuit boots and labour to complete the job please.

Kindest regards

Don Paterson
Maketu Taiapure Committee
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NZ Chartered Natural Therapies Practitioner

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Draft 2009-2019 LTCCP submission
Chief Executive officer
Western Bay of Plenty District Council
Private Bag 12803
Tauranga 3143

The Draft Long Term Plan 2009-2019

Page 4, 19, and 20: Water supply strategy review

Water metering could be avoided and Waiari Stream’s full natural flow

integrity could be maintained and so able to help dilute a lower Kaituna River effluent loading before it reached Maketu Estuary, and Council's costs could be significantly reduced below those forecast; by utilising the availability of a free supply that is currently going to waste. There is more than adequate rainfall to supply water needs and so all new residential housing and commercial buildings could be made to collect rain water from roofs and to store it under buildings for private supply with excess being stored under roadways for public supply. Existing buildings within the county could also be subsidised to collect, store and use rain water, so further reducing the demand on public supply. Water held for public supply could also provide habitat for native fish species.

Page 21 Maketu, Little Waihi and Pukehina Beach & Page 22 Katikati and Te Puke wastewater

In its 2006-16 Long Term plan, Council indicated its intent to develop a reticulated sewerage scheme for these three communities. Council proposes to build a wastewater treatment plant with land disposal, within the next 3 years to service these communities. I believe that Council could best utilise the creation of fresh water wetlands to enhance coastal pelagic fisheries production and so generate enormous commerce and revenue for this region. Treated effluent overflow could be used to significantly increase inanga growth and so production from fresh water wetlands re-created, which could in turn create an enormously productive coastal pelagic fishery with inevitable spin-offs for the Western BOP, while simultaneously also significantly reducing nutrient loading of waterways. An enhanced coastal fishery could provide enormous revenue collecting opportunity for Council as commerce expanded around it.

I believe that we can now demonstrate the financial significance of rebuilding habitat to grow coastal fisheries production to what it had been, by looking at the past and how we changed that situation from where vast inshore coastal fisheries food chains were starting from coastal fresh water wetland habitats. Vast shoals of galaxies had run up open waterways to inland lakes but 80% of them had lived within a few kilometres of the coast.

It follows that there is now a financial incentive for Government and District Councils to create wetlands and so in turn to create the significant and very exportable coastal pelagic fishery production that used to exist before coastal wetlands were drained.

Fresh water wetlands could also be made to be even further productively employed by lowering nutrient and bacteria levels in effluent and in run-off before it reached the ocean. Nutrient loading of waterways could be decreased while Inanga production in those wetlands could simultaneously be increased, with a subsequent increase in inshore coastal fisheries commercial production food chain production. Feeding wetlands effluent has the potential to make them even more productive than they ever had been. Raupo which Inanga were recorded by Graham to prefer to live in ("It will live in large areas of very slowly moving water, even in the most stagnant, swampy places that

are growing raupo" and McDowell "From the high fecundity (number of eggs) and the large size of fish living in them, lowland bush swamps with brown water appear to be the ideal habitat for galaxius maculates"), could perhaps also be harvested for stock feed and to enhance raupo growth rates and so oxygen conversion from wetlands created.

There is potential to demonstrate the creation of enormous wealth for the Bay of Plenty region and for New Zealand by re-creating wetlands in connection with the coast, and so demonstrating the creation of a commercial snapper fishery production increase, which could set the scene for nation-wide action. Treated effluent could in future be seen to be a valuable commodity, which could be used to increase fresh water inanga production.

This is an inexpensive easy solution as I have continued to describe for over 20 years. When I looked back briefly at 20 years of letters to try and make all of this happen, I wondered what to send to you and what not to bother you with. I will attach a few of them. Extracts from Treasury of NZ Fishes by David H Graham are in the Fishery Early Letters attached.

My initial intention is to initiate flooding of a significant portion of low lying farmland upstream of Maketu Estuary to provide habitat for Inanga. They could then spawn in Maketu Estuary and contribute to ocean food chains, which could by example then set the scene for enormous potential expansion of this countries inshore coastal fisheries commercial production and so overseas exchange earnings. This could be most beneficial to Maori because of their joint ownership of that fishery.

Land based agricultural production is potentially worth far less to this country in overseas exchange earnings than is oceanic production. We have to actively promote sales of butterfat amidst considerable and debatable health consequences to the consumer, whereas we cannot ever meet an overseas demand for inshore coastal fisheries commercial production. Our largest and potentially most productive farm is our 200 mile offshore economic zone.

I believe that there is now enormous potential for Regional and District Councils and Government to either purchase or lease suitable land within a few kilometres of the coast, for environmental enhancement and to create public wealth in a region through increased inshore coastal fisheries commercial production. Maketu Estuary which is currently largely devoid of fish life, could I believe now provide the ideal proofing example of potential increase in inshore coastal fisheries commercial production, because any change to the fishery in the immediate vicinity of Maketu Estuary could be easily monitored. There is currently no commercial fishery in the area.

We could start by flooding land bordering the estuary that is currently owned and farmed by Te Arawa Maori Trust Board, Doug Pamment, Red Barker, Des Burgess, Dennis Armstrong, and Violet and Alan Brain and others. These farmers could be paid by EBOP, WBOPDC or by Government at a similar rate to their current earnings from their land to farm inanga, or if they preferred could sell to EBOP, WBOPDC or Government.

Whitebaiting around Maketu Estuary could be banned, so as not to detract from an experiment to judge a potential increase in oceanic production by recreating food chains that used to exist.

Inanga prefer to spawn in maritime marsh and there is already some maritime marsh in Maketu Estuary, part of which is owned by Red Barker. Extensive marshland that used to exist before fresh water flushing flood flows were removed from the estuary, to cater to large areas of reclaimed and rateable farmland up-stream, could be replanted.

Environment BOP has collected considerable rates over the years from farmers who have benefited from their drainage scheme, at the expense of the Maketu Estuary environment. In fact wetlands that used to surround Maketu Estuary and stretch inland for miles are now having water pumped from them continuously, so removing their natural habitat from this countries potential oceanic production.

That potential production used to exist before most of this Countries coastal lowland and swamps were drained. The parents of 80% of the whitebait that used to exist lived within a few kilometres of the coast.

We are inevitably witnessing an increase in population near to our coastline. Sewerage that is currently being partially treated and then pumped into the ocean to inevitably promote the growth of sea lettuce, could instead be further treated and purified in wetland habitats. The greater the habitat that is created then the greater the purification potential and the more Inanga and Eel (tuna) and Giant Kokopu production that could also re-created.

A potential successful demonstration of a created increase in local inshore coastal fisheries commercial production, could lead this country to create significant future overseas exchange earnings from similar works in all suitable coastal lowlands within a few kilometers of the coast. It could also include the creation of access for galaxius species to inland lakes and rivers that have been isolated from the reach of galaxies species by developments including hydro dams.

Hydro lakes blocking koaro access from the sea to Lake Taupo is the classic example and did close whitebait canneries on the Waikato River immediately Arapuni Dam was built. Any hydro development on the Kaituna River would have a similar effect on already severely depleted galaxius and tuna populations and so fish ladders and deflective screens could best be a prerequisite to any water rights being granted in future I believe.

Wetlands are important for waterfowl, as well as providing habitat for fish to breed, spawn and rear their young. Wetlands also provide adult habitat for the commercially significant galaxius species that are the parents of whitebait, which spawn at the confluence of salt and fresh water contributing to inshore coastal fishery food chains, as well as for tuna (eel). Lakes Rotoiti, Rotoma and Rotorua and their tributaries provide significant galaxius habitat but there

is no longer an area of significance in the upper Maketu Estuary for galaxius species to spawn, as there had previously been.

I suggest that areas suitable to become wetland immediately are the lowlands adjacent to Maketu Rd. and Kaituna Rd. and to the Pa Rd. Drain, and to the Kaituna Wetland and all drains and lowlands adjacent to the lower Kaituna River, and including the extensive wetlands throughout Papamoa and including ponds that have been created by excavations to gain sand for developments, and including the water course that has been diverted from Papamoa under the railway line and into Tauranga Harbour, at the expense of the Papamoa wetlands galaxius and tuna populations that had previously existed.

All of these wetlands could be purchased as they became available to EBOP, WBOPDC or Government and they could all form part of an extensive recreation reserve, be stripped of buildings, fences and excavated to provide depth suitable to inanga and less suitable to exotic predatory species, be planted in raupo and flooded by the removal of pumping stations numbered 1, 2 and 3 and upwards to provide habitat for galaxius species and for tuna. Farm drains could also be purchased by EBOP, WBOPDC or Government throughout the catchments as they became available, widened and planted in raupo to further create ideal galaxius and tuna habitat.

I believe that an ideal potential wetland reserve could be created between the proposed Rangiuru Industrial Park, the proposed motorway, the Kaituna River stop-bank and the Maketu Estuary stop-bank. I do believe that the Kaituna River stop-bank could best be left in place to prevent the possibility of salt water intrusion to the wetland and to provide a potential opportunity for a large deep-water wetland in the future once land title had been secured from the current owners.

Kaituna River flood water could be introduced to the area immediately below the proposed motor-way bridge by over-topping a lowered section of the Kaituna River stop-bank at this point. The wetland could in turn drain into the lower Kaituna River at the site of the No.2 pump station, as well as into Maketu Estuary via Te Arawa wetland near to the No.1 pump station, as well as near to the existing flap-gate structure where the Kaituna Rd. drain bends towards No. 1 pump station.

Filling for the stop-bank that would be built adjacent to the motor-way and adjacent to the proposed Rangiuru Industrial Park could be taken at less cost from the adjacent area as well as from throughout the course of the Kaituna Rd, Fords Rd. and Pa Rd. drains. This could create additional deep water raupo filled wetlands that could supply surface water to wetlands created and that could also purify only partially treated AFFCO Rangiuru effluent that is currently being dumped into the lower Kaituna River and raising E. coli and Enterococci levels significantly.

Wetlands that could be created by excavating properties that are adjacent to Kaituna Rd, Fords Rd. and Pa Rd. drains as they become available for

purchase or for lease, could also drain into the lowland to the east of Maketu Rd. to enhance that former wetland habitat, and before it drained into Maketu Estuary under Maketu Rd. and adjacent to the maritime marsh inanga spawning habitat that currently exists.

Similar works on the other side of the Kaituna River could purify effluent run-off from Te Puke sewerage treatment plant, so lowering E. coli and Enterococci levels before effluent entered the Kaituna River and so also Maketu Estuary.

AFFCO Rangiuru and Te Puke borough could both very easily create extensive raupo filled wetland water purification and habitat providing systems in addition to the treatment facilities that they already have, and so the current Kaituna River pollution load from their input could be significantly reduced. Other population groupings within WBOPDC as well as Tauranga City could take similar steps to purify their effluent and to create inanga habitat.

These areas that could be created as well as a wetland that could be re-created between the proposed Rangiuru Industrial Park, the proposed Eastern Motorway and the Kaituna River and Maketu Estuary stop-banks, could all be seeding local inshore coastal commercial fisheries production, while treating effluent and lowering E. coli and Enterococci levels significantly, and so therefore may potentially attract experimental funding from all of the sources that I have previously described in writing to EBOP (Central Government, Ministry of Fisheries, DOC, WBOPDC, Tauranga City Council, Rotorua District Council, Forest and Bird, Fish and Game, commercial fishing companies and corporations who could gain from fisheries production increases, World Wildlife Fund, Pub Charity, Lottery Grants Board, environmental groups and private entrepreneurs. Funding potential exists with the four Councils involved in the Management Strategy and Government and with potential Company and Corporate sponsorship for naming rights, and with funding applications to the World Wildlife Fund, Banrok Station, Microsoft Corporation and others.) Central Government should be most interested in any potential increase in our very exportable inshore coastal fisheries production.

With regard to a proposed Kaituna River and Maketu Estuary Management Strategy Working Party forecast of aiming to recreate 100 hectares of Wetland over a 10 year period, as being an achievable goal in our Working Party's efforts to re-create something of the natural habitat that used to exist, before land drainage occurred and before the Kaituna River Drainage Scheme destroyed wetlands for pastoral farming, so stopping those wetlands from creating food chains which had built the production of the local inshore coastal fishery, I as Chairman of the Kaituna River and Maketu Estuary Management Strategy History Focus Group do believe that we could now instead aim to rebuild the production and the significant export potential of the coastal Bay of Plenty regions fishery, if we raise our expectation towards re-creating a more significant area of the previously existing wetland habitat.

With an 1840 estimate of 6,167.25 hectares of Wetland not counting Lakes in

the Kaituna River catchments, I believe that the proposed 100 hectares of potential wetland that may be recreated over 10 years as has been proposed by EBOP, does currently represent the Working Party only intending to recreate less than .06% of the lost local inshore coastal fisheries production and so export potential of a significant part of the Bay of Plenty fishery.

If we consider the monetary value alone of the Bay of Plenty's inshore coastal fishery production export potential that could easily be re-created, simply by re-flooding lowlands in isolation from pumping stations and by utilizing abundant Kaituna River flow which is carrying a pollution load to the Coast, and which could now easily instead be settled and oxidised in those wetlands while having it's E. coli and Enterococci levels reduced by inanga and by raupo, then the 100 hectares proposed thus far to be re-flooded over 10 years is a very short sighted, inadequate and inappropriate aim I believe.

In the WBOPDC Draft Long Term Plan for the future of Maketu, Gillian Payne, WBOPDC Policy and Monitoring Manager has stated that the purchase of a wetland park would remain a priority and that the action to investigate the purchase of land for the development of a Sub-regional Wetland Park be confirmed by staff, given reference to future sources of funding for an investigation into local coastal fisheries production.

We as a pioneering County drained those wetlands to produce butterfat and farm produce for export, but the coastal fisheries production that we destroyed in the process does have vastly more export potential and overseas exchange earning potential and so this must now be an overriding consideration for the Working Party and the Joint Council Committee I believe.

This is our chance to create an example of an increase in coastal fisheries production in our area that could lead to a National action to re-create an enormous future overseas exchange earning potential, from the export of snapper and other inshore species of pelagic fish that are further up the coastal food chain from those wetlands.

Aiming at 100 hectares over 10 years is well short of the mark as a consequence of the significance of the monetary value to this Region and to this Country of the potential fisheries exports and tourism business that could easily be re-created.

I suggest that the Working Party and the Joint Council Committee instead look at 6,167.25 hectares of Wetland that used to exist and do take all possible funding initiatives to recreate as much of it as possible and as soon as is possible.

As an aside I do wonder how long EBOP is going to be prepared to let Auckland City dump its partially treated effluent into the Bay of Plenty via the Auckland current. An alternative would be for Auckland to create its own wetland water purification and habitat providing systems and so the Auckland region may also be interested in helping to fund a Bay of Plenty experiment.

Kindest regards

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----- Original Message -----
From: Don Paterson
To: Colin Meadowcroft
Sent: Wednesday, February 10, 2010 12:59 PM
Subject: Te Arawa Wetland Colin Meadowcroft

Hi Colin

I have this morning learnt that the Maketu Taiapure Sub-Committee Wetlands meeting, and a presentation by Sarah Beadel of Wildlands Consultants on a survey that was recently completed on the existing remnant of Te Arawa swamp to the east of Maketu Road, will now instead be held at 6 pm on 23 February 2010. The meeting will be in the old Maketu Post Shop opposite Maketu Pies. I note that Elaine Tapsell has already copied her email to Ken Tarboton below.

I invite your and EBOP's interest in the meeting and in the possibility of EBOP being involved in the formation of a most significantly sized wetland in connection with No. 1 Pumping Station and so the Kaituna Road and Pa Road drains, and so the potential wetlands that could be created in connection with those drains, as we discussed at my home yesterday. The land is privately owned and so discussions would have to take place with regards to cooperation from land owners or compensation for land use.

The existing Te Arawa Wetland could ideally I believe be extended by excavations to include lowlands adjacent to Tapsell Drain, Singleton's Pump Drain, Singleton's Gravity Drain and Gordon's Drain and be excavated down to a level just above the high tide salt water level. This lowland could then be flooded by No. 1 Pumping Station and planted as fresh water raupo swamp-land which David Graham had noted in his pioneering investigations did contain the highest concentration of Inanga:

("- It will live in large areas of very slowly moving water, even in the most stagnant, swampy places that are growing raupo, rushes and toetoe grass, but there is always an outlet to a creek or river.
- Inanga Whitebait (galaxias maculatus) move into lowland waters rarely penetrating more than a few kilometres.
- Every lowland water that is still or gentle flowing will have shoals of maturing inanga by the beginning of summer."
- McDowall; "From the high fecundity (number of eggs) and the large size of

fish living in them, lowland bush swamps with brown water appear to be the ideal habitat for galaxius maculates."
- "Manawatu river productivity in the early days was undoubtedly due to vast areas of lowland swamp. These provided extensive habitat for inanga, giant kokopu and banded kokopu. Swamps have been drained, streams channelised, the forests felled and the whitebait have largely gone. Low lying estuarine vegetated flats at the river mouth for spawning have also disappeared. It is no wonder that the fishery isn't what it was.
- Captain Hayes emphasized the desirability of providing sanctuaries or feeding grounds for the adult fishes. Such feeding grounds have of course been greatly diminished in the course of civilized settlement by the drainage of swamps and lagoons and their conversion to agricultural lands. It would appear, however, that there are many places, areas of swamps, which are of little or no value to agriculture and in which permanent lagoons, which would accommodate considerable numbers of inanga, might be formed as a result of comparatively simple and inexpensive work.")

Inanga production could then be further enhanced by feeding them bacteria in treated effluent from farmland, from a proposed effluent treatment plant at Maketu, and with effluent from AFFCO Rangiuru which could be further purified throughout the course of the Pa Road and Kaituna Road drains, and by any raupo filled wetlands that could also be created in connection with those drains. A first step could be to gain ownership of those drains and then widen and deepen them and plant them in raupo.

Inanga, Giant, Banded and Short Jawed Kokopu, Koaro, Tuna, Bullies, Smelt and any other fresh water fish species that might live in a newly created Te Arawa Wetland would all spawn their young into Maketu Estuary and into the adjacent ocean and so would inevitably create food chains which could potentially demonstrate inshore coastal fisheries commercial production increase from the creation of fresh water wetlands within a few kilometers of the coast, which is where Inanga which comprise 80% of whitebait do live.

All commercial fish species as well as sprats, pilchards and herrings which they also eat, were witnessed by David Graham to eat whitebait. Any potential increase in inshore coastal fisheries commercial production that could now be recreated at Maketu, could then by example be a financial incentive for wetland habitat recreation around our entire coastline, and so could lead to New Zealand to developing much more significant annual inshore coastal fisheries commercial production export potential.

Our coastal inshore fishery could then become recognized as our most productive and most valuable farmland and our fresh-water swampland habitats that support that salt-water farmland production, could then receive the recognition and protection that their financial significance deserves.

Kindest regards

Don Paterson
Maketu Taiapure Committee
CLM; HbT, SRF; SNTR
NZ Chartered Natural Therapies Practitioner

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----- Original Message -----
From: Don Paterson
To: Julian Fitter
Cc: Willie Emery. ; Roku Mihinui ; trtapsell@hotmail.com ; sarah@wildlands.co.nz ; andy@wildlands.co.nz ; Keith Owen
Sent: Wednesday, October 14, 2009 1:59 PM
Subject: Don Paterson recommendations

Hi Julian

Thank you for your email. At a 7 October Maketu Taiapure Committee meeting Clem Tapsell expressed concern when I had mentioned the Ongatoroirangi Maketu Spit group because I had mispronounced it Ongatoro, as EBOP have been doing.

Clem stated that the incorrect mispronunciation of his Tipuna's name was disrespectful and if it was going to be used at all then it could best be pronounced correctly as "O nga toro i rangi."

I suggest therefore that just as Te Arawa Wetland does describe that area well and without offence, then Maketu Spit could best describe the area of that groups concern unless the group learns to pronounce and spell Ongatoroirangi Maketu Spit. We do like to bridge the cultural gap in our society by using Maori words but unless we behave with mana, then we are showing little respect I believe. On a different subject now but still on the possibility of offending Maori people, I was concerned to hear you ask Terry Tapsell as a representative of Te Arawa Lakes Trust at a recent Projects Group meeting in the Maketu Surf Club building; if Te Arawa Lakes Trust would pay to fence off Te Arawa wetland.

I realise that Peter Ellery had previously recommended to a newly formed Te Arawa Wetland Group meeting under the Maketu Tiapure Committee in the Maketu Fire Station, that Te Arawa be asked for a financial contribution towards the development of the wetland and that you were only doing what had been asked of you, but I believe that the question bordered on being offensive.

Some members of the Wetland Group have apparently not fully grasped the significance of Te Arawa Lakes Trust generosity in making this area available for habitat re-creation. I suggest that we would be hard pressed to find

another farmer who would so generously gift land for this purpose. I believe therefore that we should honour the significant generosity that has been bestowed upon Maketu community by Te Arawa Lakes Trust and that we should look elsewhere for development funding sources, which Wildlands Consultants had already noted are available.

I do also question if Peter Ellery is the right person to be chairing the group. We on the Maketu Taiapure Committee had given him a free reign to develop galaxius spawning habitat on the eastern bank of the lower Kaituna River. It was a simple task that required lowering of the significant area that contained the borrow pits to the height of the lower Kaituna River high tide level and establishing maritime marsh which galaxius species have been recorded in the past to have preferred to spawn amongst on a spring tide.

Peter has instead with public money made and re-made duck ponds complete with maimai and has planted some oak trees and about 2000 other trees with more public money, which will not enhance white bait spawning to any degree. When I had questioned his motives when I was lending a hand at the start of the project, he had replied that there was "no point creating a Club Med spawning ground if there were no fish to use it."

But because the Kaituna River and its tributaries and the Rotorua Lakes and their tributaries do provide significant habitat for galaxius species I believe that Peter's mana could now be judged accordingly. I had initiated his interest in creating more whitebait to enhance inshore coastal pelagic fisheries production in the first instance at BOP/Waikato Marine Recreational Fishers Association meetings, despite his ongoing arguments, but he forgot to mention that when he had promoted the idea to Maketu Tiapure Committee as his own.

Ray Bushell was responsible for getting cattle fenced off the western bank of the lower Kaituna River and we appear to have witnessed a significant increase in whitebait numbers this year as a result. This could I believe have been further enhanced on the eastern bank but for Peter's duck pond building interference.

I therefore believe that it could now represent another wasted opportunity if we let him dominate potential Te Arawa Wetland enhancement.

I copy below a letter re the potential of Te Arawa Wetland for Te Arawa Wetland Group Member’s interest. There is now I believe, a potential to create a significant and deep raupo filled wetland that is best suited to inanga, giant kokopu, banded kokopu and tuna habitat with Joint Council funding as EBOP now has a written intention to create 100 hectares of wetland.

The indigenous willows that I expect Wildlands consultants to recommend removing from a small part of that potential wetland, could I suggest be best removed by a log-hauler from the high ground adjacent to the swamp, if they need to be removed at all. If they were left where they are they could provide some shade to shallow water created. If that water became choked with

aquatic weed then the water level could potentially be lowered during February and the weed would be reduced.

Kindest regards

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----- Original Message -----
From: Don Paterson
To: Roku Mihinui
Cc: winnie.emery@clear.net.nz
Sent: Saturday, August 15, 2009 7:06 PM
Subject: Roku Mihinui

Hi Roku

Thank you for your email. Please find attached my submission to the WBOPDC and EBOP Ten Year Plans which does concentrate on the importance of fresh-water wetlands to tuna and to inshore coastal fishery production.

I have long consulted with Te Wano Walters and many others about my ideas around ideal restoration of Maketu Estuary and the surrounding fresh-water environments. Te Wano and I both spoke to the Kaituna River and Ongatoro/Maketu Estuary Strategy Public Feedback at Kiwifruit Country recently.

In the brief time that I took from my work to address the Hearing Panel, I saw numerous Maori men there to also support the re-creation of wetlands that had once existed. I thank you for your input also with regard to this occurring. Council does appear to have listened.

I was most grateful to hear Te Wano Walters recommend to the Hearing Panel in support of our earlier discussions, the re-creation of Te Arawa wetland to the east of Maketu Road. I do hope that this meets favor with Te Arawa Lakes Trust and with the other land owners who could be affected should this occur.

Council has summarized my submissions to the Kaituna River and Ongatoro/Maketu Estuary Strategy Public Feedback, that I have already sent to you, and to the Ten Year Plan that is attached, as follows:

“Decision Sought: Purchase and/or lease natural wetlands being drained as opportunities arise. Remove the effect of the pumping stations on draining

land. Establish the flat land currently drained into raupo swamps.

Council Decision: Accept in Part.

Council Response: Council will support initiatives to protect and restore wetland areas as part of its biodiversity program. This will include initiatives to protect and restore wetlands around the Kaituna River and Maketu Estuary.

However, widespread return of productive pasture land to wetland is not considered necessary or desirable."

It is the last sentence that I will continue to challenge; because they are instead I believe productive wetlands pumped dry for pasture.

I propose for your consideration, my belief that ideal restoration of the area could include:

1. Raise Maketu Road adjacent to Te Arawa swamp to the level of the other stop-banks surrounding Maketu Estuary.

2. Connect Maketu Road stop bank to the high ground to the east of the houses that border the swamp and so effectively protect Maketu Village from potential fresh water flooding.

3. Re-flood the area inland of Maketu Road by diverting Number One Pumping Station outlet from Maketu Estuary, under Maketu Road and onto the land to the east of Maketu Road.

4. Maintain both existing exits from the area to the east of Maketu Road and into Maketu Estuary but at an increased height and over rocks to enhance fish and tuna access between fresh and salt water environments.

5. Excavate some of the currently farmed lowland to the south-east of and inland from Maketu Road to create depth of fresh water over the summer months for galaxius species and for tuna; after having gained permission from land owners with compensation as agreed upon.

6. Plant a significant amount of the newly formed wetland area inland of Maketu Road in raupo. This area could then provide all of the following ideals:

a. "From the high fecundity (number of eggs) and the large size of fish living in them, lowland bush swamps with brown water appear to be the ideal habitat for Galaxius maculates."

b. "Inanga will live in large areas of very slowly moving water, even in the most stagnant, swampy places that are growing raupo, rushes and toetoe grass, but there is always an outlet to a creek or river."

c. "Captain L. Hayes (1932); 'Within tidal limits are mudflats bristling with salt rushes. Inanga spawn amongst rushes. Fairly long, thick growing grasses

and rushes or similar vegetation is usually chosen. In March, I noticed Inanga evidently spawning everywhere amongst the rushes."

d. "D.H. McKenzie (1904); 'During the months of March and April may be seen at high water spring tides, countless myriads of small fish from 4 to 6 inches in length, making the water literally boil, wherever any rushes exist."

Mr David H. Graham, a Marine Fisheries Investigation and Biological Station Biologist began a life long study of New Zealand fishes in 1897 which he later recorded in a book entitled 'The Treasury of New Zealand Fishes'. These writings show that there was a correlation in timing between the decline in whitebait numbers and a similar decline in populations of herrings, horse mackerel, pilchard and sprat. It is worthy of note that by 1930 and in a similar time frame, there was also a noticeable decline in kahawai numbers even though the species had not before then been over-fished.

I suggest therefore that in addition to my previous submissions on coastal fisheries management, the key to the productivity of this country's inshore coastal fishery is an abundant saline whitebait population.

McDowall; "Captain Hayes emphasised the desirability of providing sanctuaries or feeding grounds for the adult fishes. Such feeding grounds have of course been greatly diminished in the course of civilized settlement by the drainage of swamps and lagoons and their conversion to agricultural lands. It would appear, however, that there are many places, areas of swamps, which are of little or no value to agriculture and in which permanent lagoons, which would accommodate considerable numbers of inanga, might be formed as a result of comparatively simple and inexpensive work."

7. Seek and find other sites for excavation and planting in raupo as they become available, that are in connection with the Kaituna Road and Pa Road drains and so also with the area to the east of Maketu Road and so Maketu Estuary.

8. Divert treated AFFCO effluent through an extensive raupo wetland and then underneath State Highway 2 and the railway line and down Pa Road Drain and through more water purifying raupo wetlands that provide ideal habitat for tuna and for inanga populations which feed on bacteria, and so their productivity and fecundity could be made to exceed that of the past. This same habitat-creating water-purifying, inanga productivity increasing scenario could also be made to occur on the western side of the Kaituna River and could purify Te Puke Borough and dairy effluent before it reached the Kaituna River.

9. When all of the lowlands on the seaward side of the Eastern Arterial Link have been converted into raupo wetlands, by taking sand from those lowlands to the east of the Kaituna River for construction of the link, then we could also remove Number 2 and Number 3 Pumping Stations to greatly increase the depth and habitat potential of a freshwater raupo filled wetland created behind the Kaituna River Stop bank.

10. The bigger the raupo filled wetland that is now created to the east of Maketu Road to set an example for Councils to follow, then the bigger the inshore coastal fishery production that will inevitably follow as a result, as has been previously recorded in the document titled Whitebait that is attached and amongst some other previous letters on fisheries management, some of which are posted on my www.gamefishingcharters.co.nz home page.

“During 1930 to 1934 Kahawai were still numerous, but according to fishermen who have been fishing for over forty years in Otago waters, not as abundant as in former times when boats and launches could be filled easily with these fish. There is no apparent reason for this change in abundance as the Kahawai has not been over fished like other fish.”

I suggest that it was because widespread drainage of fresh water wetlands for pasture farming had caused destruction of their most significant food chain. I also suggest that we now have an ideal opportunity to prove the potential for a widespread increase in coastal inshore fisheries production, and simultaneous water purification. I believe that coastal inshore fisheries production and its offshoots that could now be created are worth far more to this countries future economy than is current butterfat and meat production off drained and pumped-dry former wetlands.

I believe that it could all now start to come back with a wetland created to the east of Maketu Road and so I ask Te Arawa Lakes Trust and other land owners to give this your careful consideration and support please.

Kindest regards

Don Paterson
Maketu Taiapure Committee
CLM; HbT, SRF; SNTR
NZ Chartered Natural Therapies Practitioner

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From: Don Paterson [mailto:nat.opc@xtra.co.nz]
Sent: 14 January 2009 8:35 p.m.
To: Roku Mihinui
Cc: winnie.emery@clear.net.nz
Subject: Don Paterson to EBOP

Hi Roku Mihinui

Please find attached my further submission to EBOP on the Ongatoro/Maketu Estuary Management Strategy after reviewing the Joint Council Feedback Package.

I invite Te Arawa Lakes Trust to please support my submission to EBOP in writing.

I had previously gained written support from Te Arawa Maori Trust Board some 20 odd years ago for my endeavors to see the Kaituna River returned to Maketu Estuary in the best possible way.

It has been a long haul and I now believe that if Te Arawa Lakes Trust were to reiterate your support for my ideas to EBOP then that could make a significant difference to the potential acceptance of those ideas by the Joint Council Committee.

Kindest regards

Don Paterson
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----- Original Message -----
From: Don Paterson
To: winnie.emery@clear.net.nz
Cc: Roku Mihinui ; trtapsell@hotmail.com ; Elaine Tapsell
Sent: Friday, September 04, 2009 7:18 PM
Subject: Te Arawa wetland 3

Hi Willie

The point that I was making at the 2 September Taiapure Committee meeting is that the Taiapure Committee is all about managing the fishery and the best way to manage it is to increase its productivity. The bigger the Te Arawa wetland that is now re-created then the greater benefit that will accrue to the local fishery I believe. Digging ponds in an area that is wahi tapu would do little or nothing to enhance the fishery.

We could be encouraging the Joint Councils, who have the stated intention of wanting to put the full Kaituna River flow back through Maketu Estuary in the way that I have recommended for two decades, and to also create 100 hectares of wetlands, to also raise Maketu Road with Council funding and to simultaneously create a significant dam which could create a significant Te Arawa Wetland, and so could greatly enhance the local fishery. A fisheries production increase demonstrated at Maketu could set an example for other councils in other places to follow, and so do similar works to further enhance the coastal fishery.

Te Arawa men who I have shared Maketu with for 25 years have all wanted the coastal and fresh water fisheries enhanced. They have little or no interest

in Peter Ellery wanting to dig holes in an area that is wahi tapu. Te Arawa Lakes Trust has generously funded Peter via the Taiapure Committee to enlarge small borrow pits on the lower Kaituna River, which has allowed him to publicly describe his own ego while promoting my ideas which he used to argue with as his own, but it has done little to enhance the coastal fishery due to the small scale of the work.

Extensive fresh water wetland now re-created on Te Arawa land, could set an example for the rebuilding of coastal fishery production with fresh water inanga, kokopu, koaro and tuna habitat, and Council could be paying to create that habitat, because they will want to raise Maketu Road in case of flooding from the river and because of OSH.

I acknowledge that I have often encouraged discussion about re-creating wetlands at Maketu Tiapure Committee meetings. I believe that wetlands are the key to coastal inshore fisheries abundance and that they will put kahawai back on the beach as they once had been. I had also believed for more than 20 years that I could get the Kaituna River back into Maketu Estuary via Papahikahawai Channel, to stabilise the spit, to deepen the lower estuary and to put pipi back outside Whakaue Marae, and so I encouraged discussion about that also. Te Wano Walters and Pia Kerr could verify this time period.

I now want to put the fish back on the beach whether Peter Ellery can see that far ahead or not. Frank Maika could. That is what I had meant at the last Taiapure Committee meeting when I had said that Frank was intelligent. I had enjoyed Frank's unfailing support for my ideas expressed at committee meetings. I had enjoyed meeting Frank on the beach on his tractor, while we were collecting kua kuas after a storm many years ago. May he rest in peace, although I believe that I do still have his support from where he is now, and Norm Newdick's and Rachael Mills and Jerry Kissinger and others including my parents who have all passed on.

The creation of a significant Te Arawa swamp is I believe our best chance to really make a difference to coastal fisheries production at Maketu, and the bigger the swamp that is now re-created then the bigger the difference we will make.

I summarize my points of recommendation for your consideration as follows:

1. Invite Council and Transit NZ to take soil from currently farmed Te Arawa lowlands and to raise Maketu Road and to isolate Maketu Village from potential Te Arawa wetlands flooding.
2. Invite Councils and DOC and whoever else to plant raupo throughout Te Arawa wetland to be re-flooded.
3. Invite Council to also raise the outflows from Te Arawa wetland so as to greatly enhance the size of Te Arawa wetland when re-flooded.
4. Invite Council to re-direct No. 1 Pumping Station outflow under Maketu Road and into Te Arawa wetland.

Kindest regards

Don Paterson
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1 January 2009

Draft Kaituna River and Ongatoro/Maketu Estuary Strategy Feedback - My further inputs are in *italics*

Chapter 2: About the Kaituna River and Ongatoro/Maketu Estuary

2.3.1 Kaituna River. Paragraph 2: Historically, the full flow of the Kaituna River passed through the Papahikahawai Channel *and behind Papahikahawai Island* into the Ongatoro/Maketu Estuary, which was used as a port. *The water depth in the lower estuary and the stability of the estuary spit were maintained by flushing Kaituna River flood flows via Papahikahawai Channel.* Since the 1950s, there have been…

2.3.1 Paragraph 5, line 3: …*the* other half…

Chapter 3: Community Concerns

3.5 Health of the Ongatoro/Maketu Estuary. Paragraph 5: The community is concerned about the amount of sediment entering the estuary and the lack of erosion-protection for the sand dune and sand spit *because of the removal of the original protective Papahikahawai Channel flow.* In the last few decades, the Ongatoro/Maketu Estuary community has witnessed dramatic changes in the estuary. There used to be three channels *in the lower estuary*, but now there is only one, and the sand dunes used to be so tall *some decades ago* that they blocked the view of Motiti Island from Maketu township - now Maketu residents can see the horizon past the sand dune.

Erosion from sand dunes *that had formed Ongatoro/Maketu Estuary spit has contributed* to *and can still be seen to be contributing* to what the community has observed. *As recently as December 2008 the most recent significant erosion to the back of the toe of the spit by a meandering estuary current flow was witnessed to have been followed immediately by deposition of sand further up the spit and so the continual widening of the toe of the spit into the estuary and the resultant infilling of the eastern end of Maketu Estuary continues to occur. This occurs without threat to Maketu or to its buildings from waves overtopping the lowered spit from the sea.*

Erosion has been occurring since the removal of a protective Papahikahawai

Channel flow, and was accelerated by trial re-introduction of Kaituna River flow to Ongatoro/Maketu Estuary via Ford's Twin Cuts, in isolation from a protective Papahikahawai Channel flow, as I had predicted in an Appeal Court hearing in opposition to the trial that it would.

There has since and as a result of that trial re-introduction, been thousands of tons of sand deposited into the lower Ongatoro/Maketu Estuary, due to incorrect professional engineering advice and due to preceding manipulation of events as I saw it; by Chris Richmond of DOC in support of Barry Wilkinson of Maketu, whose father-in-law had I was told by Barry helped to construct Ford's Twin Cuts, as if that was relevant to decisions made later.

I do recognize the significant input from both of these gentlemen which has spurred us all on to greater involvement two decades later. I do also want EBOP to know what I believe occurred before EBOP nullified my appeal with professional engineering advice, which has been proven wrong, and which I could not afford to counter without equal public funding of expenses incurred.

That professional engineering advice had been followed by an Appeal Court Judge in preference to my own, and it has resulted in an expensive and time wasting (2 decades) absolute disaster, which has seen the toe of the spit destroyed and the eastern end of Ongatoro/Maketu Estuary fill with sand, comprising in part the now significantly enlarged toe of the spit. I was subjected to public humiliation in two newspapers that I had seen, which reported the Appeal Court loss in a negative inflammatory fashion while my parents were still alive in the Maketu community.

Option N as it is now called is what I had originally proposed to Ongatoro/Maketu Estuary meetings and to DOC via Chris Richmond at those meetings, and to the Regional Conservator DOC in writing because of Chris's manipulation of minutes from those meetings I believe, and to the Minister of Conservation, Minister of Fisheries and to others, including the Appeal Court Judge.

Re-diversion via Papahikahawai Channel has not until now been considered even though it is obviously the best choice, as it was originally modeled successfully and without cost naturally in history.

The reason that I had extended Option N to Option P of late, is because I could see that Option N would not be able to deliver the significant flushing flood flows through Papahikahawai Channel, that would allow Ongatoro/Maketu Estuary to once again become a deep water harbour area, that could service a rapidly growing Western Bay of Plenty population by providing anchorage and deep water access to the sea, that is sheltered from the north-east and as it had done in the past. I had also believed it desirable to introduce a significant amount of Kaituna River fresh water to the estuary to duplicate the original circumstance, and to meet Maori expectation by returning the mauri of the river to the estuary, rather than a comparative dribble.

Option N or P could be modified to increase the amount of Kaituna River fresh water and Te Tumu entrance salt water entering Ongatoro/Maketu Estuary, as well as to decrease the amount of back-flow through the Te Tumu entrance of the Kaituna River on a falling tide, by adjusting weir height and weir length. The lower and wider the weir the more introduction of Kaituna River fresh water and also the salt water that is underneath it, that could be made to the estuary and the more back flow would occur. Conversely the higher and wider the weir the more Kaituna River fresh water introduction and the less salt water introduction could be made to Ongatoro/Maketu Estuary and the less back flow would occur.

Another as yet unconsidered modification would be to build the existing roadway that is on the stop-bank near to the mole and near to the old river course, over large culverts and as far south as was determined to be necessary, which could transport Kaituna River water under the roadway towards the mole and then turn it towards Papahikahawai Channel in the old river course. The exit could be flap-gated to prevent back low. The culverts could be permeated on one side and of sufficient dimension to allow as much fresh and salt water as was desired, to enter Ongatoro/Maketu Estuary on a rising tide from the Kaituna River, as well as salt water indirectly from Te Tumu entrance of the Kaituna River, once that salt water had traveled in from the sea under the fresh water.

This would avoid flooding the adjacent 90 acres that is currently owned by the Brain family, as had been recommended in Option P to provide a sediment settling area and to enhance the upper estuary spawning habitat for the galaxius species in the Kaituna River, which are recorded by Graham in The Treasury of New Zealand Fishes to prefer to spawn on a spring tide wherever rushes occur and in either fresh or salt water. I believe that it is reasonable to expect that if the ideal habitat was recreated there then it would be used by these adaptable native fish.

A potential successful demonstration of a created increase in local commercial coastal pelagic fisheries productivity, could lead this country to create significant future overseas exchange earnings from similar works in all suitable coastal lowlands within a few kilometres of the coast, and could include the creation of access for galaxius species to inland lakes and rivers that have been isolated from the previous reach of galaxies species by developments.

Hydro lakes blocking koaro access from the sea to Lake Taupo is the classic example and did close whitebait canneries on the Waikato River immediately Arapuni Dam was built. Any hydro development on the Kaituna River would have a similar effect on already severely depleted galaxius and tuna populations and so fish ladders and deflective screens should be a prerequisite to any water rights being granted in future I believe.

3.6 Paragraph 3: …Wetlands are important for waterfowl, as well as providing habitat for fish to breed, spawn and rear their young. *Wetlands also provide adult habitat for the commercially significant galaxius species that are the*

parents of whitebait which spawn at the confluence of salt and fresh water contributing to coastal food chains, as well as for tuna (eel). Lakes Rotoiti, Rotoma and Rotorua and their tributaries provide significant galaxius habitat but there is no longer an area of significance in the upper Maketu Estuary for galaxius species to spawn, as there had previously been.

Chapter 5: Key Outcomes - Restoring Healthy Ecosystems. Paragraph 2. Point 2: So fish can migrate freely along rivers and streams, and spawn in the tidal reach of the lower Kaituna River *and tributaries of the Ongatoro/Maketu Estuary.*

Paragraph 2. Point 3: To provide for a balanced, nourishing, natural environment (by stabilising coastal sand dunes and the sand spit *naturally*, and increasing wetland and riparian margins). *Any potential artificial stabilisation of the natural Maketu Estuary spit would I believe, detract aesthetically from the currently exceptional natural environment, as has the unnecessary rock wall that was constructed adjacent to the diving board and along Beach Rd. by Western BOP District Council: Whereas we once looked at an exceptionally beautiful natural environment while passing, we now look at and over a rather ugly rock wall that was constructed with material from outside of the immediate area, which I believe is against Government policy.*

Management Goal: Increase the flow of water to the Ongatoro/Maketu Estuary and stabilise sand dunes and *spit naturally.*

Management Goal: Protect and enhance existing wetlands…

Strategic Actions: Point 4: Increase and enhance wetland extent in the lower Kaituna *and Ongatoro/Maketu Estuary* catchments.

Chapter 7: Key Outcome - Supporting Kaitiakitanga and Local People's Stewardship

Management Goal: Restore kaimoana in the Ongatoro/Maketu Estuary. Strategic Action: Restore kaimoana beds and fish populations to the Ongatoro/Maketu Estuary *by recreating original estuary channels and deep water areas with original Papahikahawai Channel flow volumes, and with maritime marsh spawning habitat in the upper estuary, and with supporting fresh water wetlands adjacent to the estuary, and adjacent to the Kaituna River, and to its tributaries.*

Appendix 3 - Input from Focus Group and Working Party

Draft Maketu Estuary Goals. Point 5: Protect and stabilise the Maketu Sand Spit *naturally with a Papahikahawai Channel flow.*

Draft Kaituna River and Ongatoro/Maketu Estuary Action Plan Feedback - My further inputs are in *italics*

3 Strategic actions to achieve outcomes

3.1 Outcome - Improving Water Quality

3.1.1 Management goal. Protect and enhance water quality in the Kaituna River and Ongatoro/Maketu Estuary. **Table 1** and **Table 2** Strategic and Possible actions: *These are I believe most important as recorded*.

3.2.1 Management goal. Increase the flow of water to the Ongatoro/Maketu Estuary and stabilise sand dunes and spits *naturally with a Papahikahawai Channel flow.*

3.2.2 Management goal. **Table 9**. Strategic action: Increase and enhance wetland extent in the lower Kaituna Catchment. Possible actions: Point 3: Identify areas suitable to become wetland. *I suggest that these are the lowlands adjacent to Maketu Rd. and Kaituna Rd. and to the Pa Rd. Drain, and to the Kaituna Wetland and all drains and lowlands adjacent to the lower Kaituna River, and including the extensive wetlands throughout Papamoa and including ponds that have been created by excavations to gain sand for developments, and including the water course that has been diverted from Papamoa under the railway line and into Tauranga Harbour, at the expense of the Papamoa wetlands galaxius and tuna populations that had previously existed.*

All of these wetlands could be purchased as they become available to EBOP and they could form parts of an extensive recreation reserve, be stripped of buildings, fences and excavated, planted in raupo and flooded by the removal of pumping stations numbered 1, 2 and 3 and upwards to provide habitat for galaxius species and for tuna. Farm drains could also be purchased by EBOP throughout the catchment as they became available, widened and planted in raupo to further create ideal galaxius and tuna habitat.

3.3 **Outcome - Ensuring Sustainable Resource Use**

3.3.1 Management goal. Sustainable land-use development. **Table 10**. Possible actions: Point 1: …This planting should be of sufficient width to protect aquatic ecosystem values and *to be maintained as esplanade reserve*.

Table 16. Strategic action: Promote and encourage local restoration initiatives, such as wetland restoration, by landowners and community groups. Possible actions: Points 1 to 4 *are I believe of considerable significance and importance*.

3.4.3 Management goal. Restore kaimoana in the Ongatoro/Maketu Estuary. **Table 20** Strategic action: Restore kaimoana beds and fish populations to the Ongatoro/Maketu Estuary *by recreating an original scenario with significant flushing flood flows from the Kaituna River entering Ongatoro/Maketu Estuary via the Papahikahawai Channel, supported by adjacent fresh-water wetlands and galaxius spawning grounds. This has already been modelled for us by the original condition.*

If the Maketu Estuary spit is in turn mechanically breached at its narrowest point after a significant Papahikahawai Channel flow has been re-instated, then outgoing tidal flows will without interfering with the natural estuary ecology, remove sand from the eastern end of Maketu Estuary and from the artificially widened toe of the spit, which has in-filled a considerable part of the estuary, and will transport that sand back out to sea to be re-deposited on the beach, and will again re-build the spit as the entrance migrates once again towards the east. Significant infilling of the estuary by wave-washed beach sand could not occur as Papahikahawai Channel flow would be filling the estuary with Kaituna River water on each tidal cycle.

We have since trial Twin Cuts reintroduction of some Kaituna River water to Ongatoro/Maketu Estuary witnessed the spit breeched at its narrowest point and so be modeled for EBOP as I had predicted in an Appeal Court hearing that it would. Erosion from behind and breeching of the spit was caused by reintroduction of Kaituna River water to Maketu Estuary via Ford's Twin Cuts by EBOP, without a protective Papahikahawai Channel flow.

Another consequence of mechanically breaching the spit at its currently narrowest point, is that as successive Papahikahawai Channel falling tide flows progress across the lower estuary towards the east and also south-east towards Whakaue Marae, removing sand from the lower Estuary as they go, and setting the scene for the natural re-establishment of sea grass meadows, they will also allow the natural re-creation of extensive pipi beds adjacent to Whakaue Marae as had been previously recorded.

Possible action: Reintroduce (re-seed) suitable shellfish in appropriate areas of the estuary. *This is I believe completely unnecessary. We have witnessed the re-establishment of significant pipi beds in the eastern end of the estuary simply by changing the salinity in the lower estuary by re-introducing some fresh water to the estuary via Ford's Twin Cuts. It follows that if we recreate original conditions in the waterways of the estuary then we will witness a natural return of the original shellfish populations as well as stable estuary channels and deep water areas.*

Appendix One - Actions recommended by Focus Groups

Recommended actions from Urban and Industrial Development Focus Group - My further inputs are in *italics*

U2.1 Implement design controls on development that recognise the importance of the Kaituna River and Maketu Estuary's visual catchment, …

i.e. re-build the spit naturally with a significant Papahikahawai Channel flow.

i.e. remove the unnecessary rock wall above the level of the foot path along Beach Rd. There could instead be a continuation of the board near to the monument or something similar which provided seating and a pedestrian barrier, if deemed to be necessary at all, but without restricting the view.

Recommended actions from Wetland and Aquatic Habitat Focus Group - My further inputs are in *italics*

W5.1. Investigate and implement ways to improve aquatic habitat values for fish and waterfowl in drains and canals. This includes: Point 2: Providing for fish passage between canals and streams *and between those and the Ongatoro/Maketu Estuary and Kaituna River.*

Recommended actions from Ongatoro/Maketu Estuary Focus Group - My further inputs are in *italics*

E1 Protect and stabilise the Maketu Sand Spit *naturally.*

E3.1 Reintroduce (re-seed) shellfish in appropriate areas of the estuary. *I do not believe this to be necessary as previously explained re 3.4.3 Table 20 above.*

E6.1 Investigate the feasibility of mechanically dredging sand from estuary channels, through commercial sand extraction. *I do not believe this to be necessary or desirable as previously explained in Chapter 3: Community Concerns above. Floods through Papahikahawai Channel will do this without cost and without disturbing the balance of the natural estuarine ecology while simultaneously building the spit to protect the estuary ecology indefinitely and naturally and without cost.*

Kaituna River and Maketu Estuary Discussion Document on Potential Re-diversion Options Feedback - My further inputs are in *italics*

5. Options Analysis. Paragraph 5; *Option L is slightly less effective than Option N and is estimated to cost a little less if one ignores the consequence of Option L further destabilizing the toe of the spit and causing yet more infilling of the eastern end of Ongatoro/Maketu Estuary. Neither option requires a power supply to work gates and so I think that you had meant to record Options H and R respectively here?*

7. ***Why Choose a Preferred Option at this Stage***

A preferred option has been chosen so we can let you know what the Joint Council Committee *has chosen* and to help you form your views on what you think the best option maybe…

Kindest regards

Don Paterson
Chairman, History Focus Group
Kaituna River and Maketu Estuary Management Strategy

----- Original Message -----
From: Don Paterson
To: Elaine Tapsell
Cc: julianfitter@xtra.co.nz ; winnie.emery@clear.net.nz

Sent: Saturday, July 18, 2009 3:48 PM
Subject: Re: Meeting June 23rd.

Hi Elaine

Thanks for keeping me in the loop. I missed the last Tiapure Committee meeting while busy at work. I am pleased to see my ideas are now gaining some momentum.

I do wonder if No. 1 pumping station could best be directed under Maketu Road and into the wetland area that is to be re-created with the apparent blessing of Whakaue/Te Arawa Lakes Trust/private ownership(?), rather than pumping into the Maketu Estuary drain that is currently owned by Red Barker, as is a significant part of Maketu Estuary where the maritime marsh is growing.

This preferred inanga spawning habitat (Quote: Graham: Treasury of NZ Fishes) and the lowland adjacent to it that is currently being farmed by Red Barker, Te Arawa Lakes Trust and others may be able to be purchased or leased, enhanced and preserved by the Joint Councils and Government? There is more land adjacent to Red Barkers land that is I believe available to be purchased now. There are other privately owned blocks further up the Kaituna Rd. drain that may also become available for wetland re-creation and which could be linked to Maketu Estuary via the Kaituna Road Drain and No. 1 Pumping Station.

If No. 1 Pumping Station was flooding the area to the east of Maketu Rd. with fresh water from the Kaituna Rd. drain then there would be significantly more fresh water adult inanga, kokopu and tuna habitat created east of Maketu Rd. as part of the wetland to be enhanced.

The Maori bones from the Papamoa sand dunes that are buried it the swamp to the east of Maketu Rd. need not be disturbed and could be further protected by flooding the area. Further wetlands which could be re-created inland of both No.1 and No. 2 Pumping Stations could be connected with the Kaituna Rd. drain and so with the sea via the wetland to be enhanced east of Maketu Rd.

I question the wisdom or otherwise of considering moving a flap gate structures that are currently keeping salt water out of an area that we wish to become enhanced fresh water inanga, kokopu and tuna and invertebrate habitat. The flap gates do not restrict access to the juveniles of native fish species that are returning from salt water to their adult fresh water habitat anywhere near as much as do white-baiters nets, but they do keep most of the salt water out of that habitat, I believe. The more fresh water that could be made to flow out of this area to the east of Maketu Rd. then the more natural access could be created for native fish species between their adult fresh and juvenile salt water habitats.

Re planned Maketu Spit enhancement work 19/6/09:

I believe that the Community and Councils could best consider that if Kaituna River flow is re-introduced to Maketu Estuary via the Joint Council Committee's preferred re-diversion option of Papahikahawai Channel, and if the spit is then mechanically breached at its narrowest point opposite the Marae, so creating a new and temporary Maketu Estuary entrance, then the entrance would migrate back to the Surf Club and an ideal spit habitat would reform, as it did last time that this occurred and as we have already witnessed it doing, following the most recent breaching of the spit that was made to occur by Council forcing re-introduction of Kaituna River flow to Maketu Estuary via Ford's Twin Cuts and so around the back of the estuary and without a protective Papahikahawai Channel flow.

Once Maketu Estuary entrance had moved back to the Surf Club following proposed mechanical breaching following expected Papahikahawai Channel re-introduction of Kaituna River flow to Maketu Estuary and once sand that is currently filling the lower estuary had been flushed back out to sea on falling tides, then sand fences could be used to more quickly raise the height of the newly formed spit where it is currently forming a ridge naturally and so could stop wave overtopping from again contributing to infilling the lower estuary.

Kaituna River flow filling the estuary via Papahikahawai Channel and then exiting from the Maketu entrance, could prevent both further erosion of the back of the spit as can currently be seen opposite Whakaue Marae and could also prevent wave washed beach sand from further infilling the estuary through the entrance.

Occasional Kaituna River flood flows via Papahikahawai Channel could transport sand out of Maketu Estuary on a falling tide which would enhance the stability of the spit by depositing extra sand on the beach.

Kindest regards

Don Paterson CLM SRF HbT SNTR
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Kaituna River/Ongatoro/Maketu Estuary Management Strategy
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www.gamefishingcharters.co.nz

1 January 2009

Ingrid Pak
Environmental Engineer

for

Ken Tarboton
Group Manager Rivers & Drainage
Environment Bay of Plenty

Box 364 Whakatane 3158

Hi Ingrid,
Thank you for your letter dated 17 November 2008.

Please find attached my further submission on the Ongatoro/Maketu Estuary Management Strategy after reviewing the Joint Council Feedback Package.

A weir would allow greater flushing peak flow and larger beneficial flood events than would 3 m floodgate culverts and would greatly alter estuary channels back towards how they originally were, before the Kaituna River exit was confined to Te Tumu in isolation from Maketu Estuary.

Peak flow rates through Papahikahawai Channel could not threaten the stability of the spit which now forms the estuary, because of flow trajectory and because the estuary will always provide a lower exit for Papahikahawai Channel flow than would the adjacent sand dunes.

The removal of a Papahikahawai Channel flow and the construction of Fords Twin Cuts undermined the stability of Ongatoro/Maketu Estuary channels, as well as the spit and has caused infilling of Ongatoro/Maketu Estuary with wave washed beach sand and by repetitive erosion from behind the toe of the spit by meandering estuary channels.

The estuary entrance could be maintained at the eastern end of the beach and the spit could be stabilized naturally by a significant Papahikahawai Channel flow, which could re-create original estuary conditions and the deeper water anchorage that had previously existed.

If the entrance to Ongatoro/Maketu Estuary was forced out at the spit's narrowest point once a significant Papahikahawai Channel flow had been reinstated, then sand which has filled the lower estuary would be flushed back out to sea and would rebuild the beach and would stabilise and Ongatoro/Maketu Estuary spit, and sand dunes which would steadily gain height naturally without being eroded from behind.

I have explained these points in more detail in the attached document as well as during the past 20 years of correspondence with EBOP and DOC and I invite yours and Ken's careful study of points made in my feedback submission before I contact Ken personally re same.

Kindest regards

Don Paterson
Chairman, History Focus Group
Kaituna River and Maketu Estuary Management Strategy

----- Original Message -----
From: Don Paterson
To: Raewyn Bennett
Cc: info@envbop.govt.nz ; Kaituna.Maketu@envbop.govt.nz ; Roku Mihinui ;

trtapsell@hotmail.com ; sarah@wildlands.co.nz ; andy@wildlands.co.nz ; taurangaeasternlink@nzta.govt.nz ; Ken Tarboton ; "Elaine Tapsell" ; "Willie Emery" ; "Peter Ellery" ; "'Julian Fitter'" ; "'Maureen Burgess'" ; "'Raewyn Bennett'" ; "Glenn Ayo" ; "Keith Owen" ; "'Don Paterson'" ; "'Ray Bushell'" ; "'Trevor Hughes'" ; Gillian Payne
Sent: Saturday, October 24, 2009 8:22 PM
Subject: Te Arawa wetland 5 Raewyn Bennett

Hi Raewyn

Copy below for your information and I do hope your support.

You had asked at a 14 October Te Arawa Wetlands Group meeting where else that EBOP might be encouraged to purchase lowlands for the further creation of wetlands.

I have previously recommended in submissions to EBOP and to WBOPDC attached, that the Kaituna Road and Pa Road drains could be purchased, widened, deepened and planted in raupo, and that they could be supplied with nutrient from treated AFFCO effluent to exaggerate inanga production, in connection with Te Arawa swamp via No. 1 pumping station.

There is also another 40 acres of lowland on the northern side of Kaituna Road that could now be available for EBOP to purchase from the current owners and to excavate it to create wetlands in connection with the Kaituna Road drain, I believe.

As other lowland properties in connection with the Kaituna Road and Pa Road drains and or the eastern arterial route, which could excavate adjacent properties for fill to build the route, did become available to EBOP to purchase, then they could all create extensive raupo filled wetlands that could purify effluent and build local coastal fisheries production with inanga production, and so could stimulate the production of coastal fisheries food chains and considerable commerce and wealth for the BOP region.

Te Puke Borough and potential Papamoa East treated effluent could also I believe, best be used to stimulate inanga production in wetlands on that side of the Kaituna River course.

Kindest regards

Don Paterson SRF HbT SNTR CLM
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----- Original Message -----
From: Don Paterson
To: Ken Tarboton
Sent: Thursday, March 05, 2009 5:59 PM

Subject: Fw: Draft Kaituna River and Ongatoro/Maketu Estuary Strategy Feedback

Hi Ken

This is the email below that I had mentioned by phone yesterday when I had asked if you had seen it.

The spit was last narrowed and then breeched by wave over-topping, following trial re-introduction of Kaituna River flow to Maketu Estuary via Ford's Twin Cuts, as I had predicted would occur in an Appeal Court hearing.

The Maketu Estuary entrance then migrated on an out-going tide from where the dark dune vegetation currently ends and towards the east, eroding the spit in its path and rebuilding a lower spit behind itself.

Increased in-filling of the lower estuary with wave washed beach sand occurred simultaneously on an incoming tide and so it enlarged the flood tide delta and enlarged the toe of the spit which now fills a large part of the lower Maketu Estuary. This spit toe has continued to enlarge and to in-fill the estuary.

Flap-gate structures at Ford's Twin Cuts were then sabotaged by someone, which temporarily stopped so much erosion occurring at the back of the toe of the spit from current flow on an out-going tide that was initiating in the back of the estuary. The flap gate structures were then repaired and so more water was again forced against the back of the spit on an out-going tide and the spit is steadily being narrowed again.

It would be a simple and relatively in-expensive first-stage solution to now put large culverts in place in the old river course at Te Tumu as you had mentioned and at a height that would allow Maketu Estuary to fill from this point on an incoming tide, when the lower Kaituna River water level is always higher than is Maketu Estuary water level. If the culverts were kept at the height of the surface water in Maketu Estuary at or above mid-tide, then most of the water in Maketu Estuary would continue to exit near to the Surf Club.

If the spit was then mechanically breached at its narrowest point, Maketu Estuary entrance would again close near to the Surf Club as it did last time and the newly formed entrance would migrate back towards the Surf Club, removing the enlarged toe of the spit and the flood tide delta and rebuilding the beach.

If culverts installed in the old river course at Te Tumu were of sufficient size and number to allow Kaituna River flood flows to again flow through Maketu Estuary, then sand would be scoured from the lower estuary as flood water changed direction to exit near to the Surf Club and deep water anchorage would again be created.

Maketu Estuary spit would simultaneously be protected by the same

Papahikahawai Channel flow and so would gain height again.

Sand would be removed from the lower Maketu Estuary naturally and in an environmentally friendly way without disruption to the estuarine ecology.

The beach would be re-built to its original condition and sand would again cover the rocks in front of the Surf Club.

This could all be achieved without spending much money at all as it could have been done 20 years ago but for the emotional insistence mentioned below.

Kindest regards

Don Paterson
Natural Therapies

----- Original Message -----
From: Don Paterson
To: Kaituna.Maketu@envbop.govt.nz
Cc: Michelle Lee
Sent: Wednesday, February 11, 2009 12:12 PM
Subject: Draft Kaituna River and Ongatoro/Maketu Estuary Strategy Feedback

Hi Michelle,
Further to our conversation at Whakaue Marae last evening I now believe that my submission could best be read in conjunction with the attached documents which demonstrate a significant history of careful observation and recommendation.

Please note that my statements to the Appeal Court Judge as were recorded in the Tauranga Appeal Court and in my subsequent 1993 letter to Alan Willoughby have now been proven to have been entirely correct.

Please also note that attempted re-introductions of Kaituna River water to Maketu Estuary via Ford's Twin Cuts have been a complete failure that have destroyed the toe of the Maketu Estuary spit and that have filled the lower Maketu Estuary with sand.

Please also note that all of the money that has been spent to date on consultation and on construction of attempted and failed re-introductions via Ford's Twin Cuts has been a complete waste of public funds. To even consider that option again because of Barry and Aroha Wilkinson's emotional insistence would I believe be less than intelligent.

We now have an opportunity to re-introduce Kaituna River water to Maketu Estuary via the original and so already modelled old river course through Papahikahawai Channel at very little expense, with or without closing the Te Tumu entrance, and simply by installing pipes initially to transport high tide fresh water flow into the estuary which fills more slowly than does the lower

Kaituna River.

We also have a parallel opportunity to remove sand naturally from the lower estuary without cost and without negatively affecting the estuary ecosystem while simultaneously rebuilding a wide and stable spit.

Kindest regards

Don Paterson
Natural Therapies

----- Original Message -----
From: Don Paterson
To: Kaituna.Maketu@envbop.govt.nz
Sent: Tuesday, February 10, 2009 4:25 PM
Subject: Don Paterson 3 in 1 as requested

Hi Michelle

Here are the three latest emails in one as my submission to the **Draft Kaituna River and Ongatoro/Maketu Estuary Strategy Feedback** and in addition to 20 previous years of correspondence re same which have already been copied to EBOP via Bill Bayfield.

Kindest regards

Don Paterson

1 January 2009

Ingrid Pak
Environmental Engineer

for

Ken Tarboton
Group Manager Rivers & Drainage
Environment Bay of Plenty
Box 364 Whakatane 3158

Hi Ingrid

Thank you for your letter dated 17 November 2008.

Please find attached my further submission on the Ongatoro/Maketu Estuary Management Strategy after reviewing the Joint Council Feedback Package.

A weir would allow greater flushing peak flow and larger beneficial flood events than would 3 m floodgate culverts and would greatly alter estuary channels back towards how they originally were, before the Kaituna River exit was confined to Te Tumu in isolation from Maketu Estuary.

Peak flow rates through Papahikahawai Channel could not threaten the stability of the spit which now forms the estuary, because of flow trajectory

and because the estuary will always provide a lower exit for Papahikahawai Channel flow than would the adjacent sand dunes.

The removal of a Papahikahawai Channel flow and the construction of Fords Twin Cuts undermined the stability of Ongatoro/Maketu Estuary channels, as well as the spit and has caused infilling of Ongatoro/Maketu Estuary with wave washed beach sand and by repetitive erosion from behind the toe of the spit by meandering estuary channels.

The estuary entrance could be maintained at the eastern end of the beach and the spit could be stabilized naturally by a significant Papahikahawai Channel flow, which could re-create original estuary conditions and the deeper water anchorage that had previously existed.

If the entrance to Ongatoro/Maketu Estuary was forced out at the spit's narrowest point once a significant Papahikahawai Channel flow had been reinstated, then sand which has filled the lower estuary would be flushed back out to sea and would rebuild the beach and would stabilise and Ongatoro/Maketu Estuary spit, and sand dunes which would steadily gain height naturally without being eroded from behind.

I have explained these points in more detail in the attached document as well as during the past 20 years of correspondence with EBOP and DOC and I invite yours and Ken's careful study of points made in my feedback submission before I contact Ken personally re same.

Kindest regards

Don Paterson
Chairman, History Focus Group
Kaituna River and Maketu Estuary Management Strategy

5 February 2009

Ken Tarboton
Drainage Engineer
EBOP

Hi Ken

I have had an opportunity in the early hours of this morning to reflect on our discussion last evening and I wish to clarify the following points with you as I see them:

If pipes were installed in the old Kaituna River course at Te Tumu as you had proposed and at a low enough height to allow significant flushing flow to enter Maketu Estuary, which I envisage would be from the height of the bar at Te Tumu exit, which is reflected by the height of Kaituna River surface water at that point at low tide, then considerable sand would then enter Papahikahawai Channel from Te Tumu entrance of the Kaituna River as the Maketu Estuary filled from this point. If you stopped the sand you would also stop the salt water.

Alternatively the re-introduction structure that I had proposed to you could transport salt water to that point from further in-land and so would be without sand. Holes to reintroduce salt and fresh water could be big enough to drive a car through them if you wanted them to be or they could be many vertical slits that people could not get through.

We had discussed a potential wetland reserve that could be created between the proposed Rangiuru Industrial Park, the proposed motorway, the Kaituna River stop-bank and the Maketu Estuary stop-bank and you mentioned the idea of removing the Kaituna River Stop-bank. I do believe that we could best leave the Kaituna River stop-bank in place to prevent the possibility of salt water intrusion to the wetland and to provide a potential opportunity for a large deep-water wetland in the future once land title had been secured from the current owners.

Kaituna River flood water could be introduced to the area immediately below the proposed motor-way bridge by over-topping a lowered section of the Kaituna River stop-bank at this point. The wetland could in turn drain into the lower Kaituna River at the site of the No.2 pump station as well as into Maketu Estuary near to the No.1 pump station and near to the existing flap-gate structure where the Kaituna Rd. drain bends towards No. 1 pumping station.

Filling for the stop-bank that would be built adjacent to the motor-way and adjacent to the proposed Rangiuru Industrial Park could instead be taken at less cost from the adjacent area as well as from throughout the course of the Kaituna Rd, Fords Rd. and Pa Rd. drains. This could create additional deep water raupo filled wetlands that could supply surface water to further wetlands created and that could also purify only partially treated AFFCO Rangiuru effluent that is currently being dumped into the lower Kaituna River and raising E. coli and Enterococci levels significantly.

The wetland that could be created by excavating properties that are adjacent to Kaituna Rd, Fords Rd. and Pa Rd. drains as they become available for purchase or for lease, could also drain into the lowland to the east of Maketu Rd. to enhance that former wetland habitat, and before it drained into Maketu Estuary under Maketu Rd. and adjacent to the maritime marsh inanga spawning habitat that currently exists.

Similar works on the other side of the Kaituna River could purify effluent run-off from Te Puke Sewerage Treatment Plant before it entered the Kaituna River and so also Maketu Estuary.

AFFCO Rangiuru and Te Puke borough could both very easily create extensive raupo filled wetland water purification and habitat providing systems in addition to the treatment facilities that they already have and so the current Kaituna River pollution load from their input could be significantly reduced.

These areas that could be created as well as a wetland that could be created between the proposed Rangiuru Industrial Park, the proposed motorway and

the Kaituna River and Maketu Estuary stop-banks, could all be seeding local coastal commercial fisheries production and so therefore may potentially attract experimental funding from all of the sources that I have previously described in writing to EBOP, and could include funding from central Government who should be most interested in any potential increase in our very exportable coastal fisheries production.

As an aside I do wonder how long EBOP is going to be prepared to let Auckland City dump its partially treated effluent into the Bay of Plenty via the Auckland current. An alternative would be for Auckland to create its own wetland water purification and habitat providing systems and so the Auckland region may also be interested in helping to fund a Bay of Plenty experiment?

Kindest regards,

Don Paterson
Natural Therapies

----- Original Message -----
From: Don Paterson
To: gda@westernbay.govt.nz
Cc: trtapsell@hotmail.com ; Winnie.emery@clear.net.nz ; mailto:roku@tearawa.iwi.nz ; Peter Ellery ; julianfitter@xtra.co.nz ; maureenburgess@xtra.co.nz ; Raewyn Bennett ; kowen@doc.govt.nz ; Elaine Tapsell
Sent: Wednesday, August 26, 2009 12:31 PM
Subject: Fw: Arawa Wetland

Hi Glen

Please note a correction to my email address that you had sent to Roku below: nat.opc@xtra.co.nz

"D) potential inclusion of small areas of adjacent low lying farmland" could instead ideally I believe, be a large area of adjacent low lying farmland.

"The previous Te Arawa Maori Trust Board and the current Te Arawa Lakes Trust has always expressed their support for the wetlands project." I have personally been canvassing that support from Maketu for more than 2 decades and support given is because Te Arawa want to see the fish returned. The bigger the wetland that is now re-created then the more food chains and so fish that will inevitably follow. I had most recently invited both Teri Tapsell and Te Wano Walters to approach Te Arawa Lakes Trust in support of the proposal that I had emailed to Roku.

It has already been stated in committee at Maketu Tiapure meetings that the wahi tapu on the swamp does not allow a digger to go in there and so please take care that no offence is given by pursuing Peter Ellery's individual idea any further. The current sharemilker had already been insensitive and disrespectful by putting a digger through the area some years ago.

If EBOP is to put the full flow of the Kaituna River back through Maketu

Estuary as is now planned and as I have recommended for more than two decades, then Maketu Road will have to be raised and so funding for the earthworks that I have proposed to Roku might be met by EBOP and WBOPDC as well as by whoever that Wildlands Consultants can also find to consecutively create a Te Arawa wetland.

I agree with Te Arawa Lakes Trust that "the contribution of the land is sufficient." I also believe that the contribution is significant and so I believe that we need to look elsewhere for funding.

I believe that ideal restoration of the area would follow the raising Maketu Road and redirecting No. 1 pumping station under it and raising the outlets as I have previously described. The rest will take care of itself as has been occurring for millions of years without cost and without consultation. Restoration could though be enhanced by planting native flora I believe.

Kindest regards

Don Paterson SRF HbT SNTR CLM
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28 Jellicoe Street
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Ph 07 573 5533, 07 573 9403, 0274 517 947

Hi Claire,
Further to points that I have made in my 25 July 08 letter below, I now wish to clarify for the Working Party, The Joint Council Committee and for Technical Advisory Staff via you please, that Option P had been modified since my original proposal to create an overtopping structure of maximum length to allow a greatest possible amount of Kaituna River surface fresh water to enter Maketu Estuary.

This had been expressed as a Public desire since my Appeal Court Hearing and since attempted and twice-failed re-introduction of Kaituna River water to Maketu Estuary via Twin Cuts, which has again been witnessed to have accelerated erosion of the toe of Maketu Estuary Spit as I had predicted in the Appeal Court that it would and to the point where the lower Maketu Estuary is now significantly filled by the spit.

Considerable Public Funds have been wasted to date and those responsible could perhaps be held accountable for wrong advice given and for wrong decisions made. They were all well financially rewarded for their advice.

Consideration could I believe in fairness also be given to compensating me for public humiliation because of those decisions. After my views had been repetitively dismissed by Chris Richmond of the Department of Conservation, I was publicly berated by an Appeal Court Judge who had initially tried not to hear the case at all and I was then humiliated by two public newspapers

following his decision.

The Brain family has said that they do not want their land flooded. The Maketu Community have said that they want Kaituna River fresh water returned to Maketu Estuary as opposed to salt water entering Maketu Estuary via Te Tumu entrance of the Kaituna River.

The publicly owned stop bank between the mole at the mouth of the Kaituna River and as far upstream as is required to effectively capture the fresh water on top of the salt water in the lower Kaituna River, which I suggest is at least as far as the width of the lower Kaituna River at its widest point, could now be constructed to incorporate large round concrete culverts or box sections placed end on end and with grills to allow the top fresh water surface layer to be carried in the culverts towards the mole and to be turned against concrete at that point and directed into Maketu Estuary via Papahikahawai Channel, as well as under the 1971 subsidized rock protection which currently allows farm access to Papahikahawai Island.

The Kaituna River stop bank could continue to provide access to the mole and to the beach from Ford Rd. while also providing a means of introducing a maximum amount of fresh Kaituna River water to Maketu Estuary with minimal effort and at minimal expense. Papahikahawai Channel flow could simultaneously stabilize Maketu Estuary Spit without threatening the stability of the spit because of its direction being parallel to the spit and because of the curvature of the spit.

When a tidal Papahikahawai Channel flow had been re-established from the Kaituna River and into Maketu Estuary, I believe that if the spit was mechanically breeched at its narrowest point which will eventually be breeched anyway if nothing is done, then Maketu Estuary would fill and drain from this point and the newly formed Maketu Estuary mouth would migrate back towards the east and sand would flush from the lower Maketu Estuary and back out onto the beach which would re-build the sand spit behind itself.

We have already witnessed this occurring when the spit was most recently breeched following the repeated and unnatural reintroduction of Kaituna River water to Maketu Estuary from Twin Cuts.

This would be a cost effective and natural way of removing sand from the lower Maketu Estuary without disturbing natural ecosystems within the estuary. A newly formed spit could be encouraged to quickly gain height and so prevent overtopping from again infilling the lower estuary.

Kindest regards,
Don Paterson

----- Original Message -----
From: Don Paterson
To: Claire.Battersby@envbop.govt.nz
Cc: Elaine Tapsell

Sent: Monday, July 21, 2008 7:37 PM
Subject: Maketu Tiapure Committee

Hi Claire,
At the 2 July meeting of the Maketu Tiapure Committee I was asked to make enquiry of you re progress of the Kaituna River & Maketu Estuary Management Strategy and with particular reference to an anticipated and expected return of Kaituna River flow to Maketu Estuary through the Papahikahawai Channel please.

Maketu Tiapure Committee would like EBOP to seek to gain ownership of the Kaituna Rd. and Ford Rd. and Pa Rd drains and of the lands in their immediate vicinity as they became available to purchase. Maketu Tiapure Committee would then like EBOP with Environmental Enhancement Funding to widen those drains and to plant them with Raupo to create ideal and natural habitat for inanga, kokopu and tuna adults.

Maketu Tiapure Committee does envisage that this could create a significant increase in food chains adjacent to and moving through Maketu Estuary that could in turn be witnessed by an increase of marine life in and around Maketu Estuary.

Maketu Tiapure Committee does envisage that these works could provide EBOP with an opportunity to measure and so to calculate a potential increase in BOP coastal fisheries production and so export potential from similar works in all BOP farm drains within a few kilometres of the coast.

I have copied this correspondence to Elaine Tapsell, Secretary, Maketu Tiapure Committee.

Kindest regards

Don Paterson
Maketu Tiapure Committee
Kaituna River & Maketu Estuary Working Party

25 July 2007

Hi Claire,
Thank you for your letter dated 23 July re the 2 August Maketu Estuary/Flood Management Focus Group and for the Re-diversion of Kaituna River into Maketu Estuary Hydraulic Modelling and Costing Report.

With reference to the mailing list please note that I do attend Kaituna River and Maketu Estuary Management Strategy Meetings also representing Maketu Tiapure Committee and that John Singleton does attend representing Te Puke Forest and Bird.

The Minutes of 8 March 2007 Maketu Estuary Focus Group Meeting refer to a

separate document containing notes taken at the meeting and which I have not received?

I wish to make the following comments about the Re-diversion of Kaituna River into Maketu Estuary Hydraulic Modelling and Costing Report:

1. A reason for ongoing Public outcry requesting restoration of Maketu Estuary is that it has silted up since the Kaituna River flushing flood flows were removed from the Estuary.
2. The options of re-diversion that have been considered in the report have not taken into consideration flushing flood flows and have concentrated instead on normal Kaituna River flows.
3. Option P had been designed to best utilise flushing flood flows to remove sand that had accumulation within Maketu Estuary at minimal capital outlay, while stabilizing Maketu Estuary Spit.
4. Unless modelling is done for Option P during times of peak Kaituna River flood flow there is inevitably bias reporting by the report of the volume of water that could be entering Maketu Estuary from the Kaituna River via Option P.
5. All of the other options would be considerably less effective at delivering peak flushing flows to Maketu Estuary from the Kaituna River
while incorporating Maketu Estuary Spit stabilizing Papahikahawai Channel flow, than would option P. Option H, I, J, L and R would in addition further accelerate erosion of the back of the toe of the Maketu Estuary Spit and so infilling of Maketu Estuary, as did the trial Twin Cuts re-introduction following the Appeal Court hearing and as I had predicted that it would.
6. Page 13, Paragraph 7, Option P of the Report contains a grammatical error and so is confusing. It appears to miss the point that the Te Tumu exit of the Kaituna River would remain open and un-changed for Option P and so would not require erosion protection.
7. Kaituna River water that had overtopped the Kaituna River Stop-bank in Option P, between Te Tumu Entrance and Twin Cuts, would be travelling parallel to and then bending around the Maketu Estuary Spit after it had left Papahikahawai Channel and so it could not cause erosion of the spit.
8. The majority of Option P Kaituna River water introduced to Maketu Estuary would be travelling between Papahikahawai Island and Twin Cuts through the area that is currently blocked by the 1971 Subsidised Rock Protection as had occurred naturally and so there would not be erosive force on the back of the spit adjacent to Te Tumu or adjacent to Papahikahawai Channel. Ponding that would occur at high tide would further reduce this possibility and at low tide flood flows would be confined to Papahikahawai and Maketu Estuary channels.
9. Page 14, Paragraph 7, Conclusions states that a range of other flow scenarios should be assessed and I believe that the most important of these is peak Kaituna River flushing flood flows as these have the potential via Option P of maintaining Maketu Estuary without cost.
10. Page 31, Paragraph 1 states that “Riprap is assumed to be needed on the outside of the bend created as the river flows back into the Papahikahawai Channel.” This has been explained as being unnecessary in Point 7 and Point 8 above.
11. The total $390,387 forecast total net cost of Option P could therefore be

reduced to $44,100 to Remove the Stop-banks, Kaituna River right bank plus $16,000 to Remove informal “stop-banks”, Maketu Estuary totalling $60,000 and representing the cheapest option for capital works by far. There are also the forecast savings of $74,094 for saved Stop-bank Renewal Works and Deferred or Lesser Top-ups of Other Stop-banks highlighted in the Report.
12. Page 39, Paragraph 8, Option P, the rock rate ceases to be a factor as it is not necessary to purchase any.
13. I recommend that Councils and Government do now attempt to attain a water right from Alan Brain and family to allow their land to be used for ideal Maketu Estuary restoration via Option P. Allan has previously stated as Power of Attorney and Owner of a small portion of that land, that he does not want to sell as has his mother Mrs. Violet Brain who still lives adjacent to Twin Cuts. I suggest that they might instead be persuaded to lease the land for an annual fee well in excess of what a Sharemilker is returning to them?
14. I also suggest that work could be done in stages by first overtopping Kaituna River flow from near Te Tumu Entrance of the Kaituna River and directing it through Papahikahawai Channel for some time, before a more significant volume of water from the Kaituna River is again allowed to flow either side of Papahikahawai Island. This would allow a Papahikahawai Channel flow to scour and deepen the Papahikahawai Channel naturally before that opportunity was lost and to widen and stabilise Maketu Estuary Spit at the same time, which is experiencing ongoing erosion from behind.
15. An overtopping structure could incorporate a bridge which would allow continued access to the right side of the Te Tumu entrance of the Kaituna River.

Kindest regards,

Don Paterson
Natural Therapies/BOP Game Fishing Charters/Maketu Tiapure Committee

3 May 2007

Ruth Feist
Senior Environmental Planner
Environment Bay of Plenty
Re: Kaituna River and Maketu Estuary Management Strategy

Hi Ruth

Further to my 25 April 2007 email to you, re the draft Working Party Minutes of the 19 April 2007 Whakaue Marae Working Party Meeting and now following the 26 April Paengaroa Hall Wetlands Focus Group Meeting, which seemed to have accepted in the majority a proposed forecast of aiming to recreate 100 hectares of Wetland over a 10 year period as being an achievable goal, in our Working Party's efforts to recreate something of the natural habitat that used to exist before land drainage occurred and before the Kaituna River Drainage Scheme destroyed wetlands for pastoral farming, so stopping those wetlands from creating food chains which had built the production of the local Coastal Fishery, I as Chairman of the History Focus

Group do believe that we could now instead aim to rebuild the production and the significant export potential of the coastal fishery from the Bay of Plenty region, if we raise our expectation towards recreating a more significant area of the previously existing wetland habitat.

With an 1840 estimate of 6,167.25 hectares of Wetland not counting Lakes, I believe that the proposed 100 hectares of potential wetland that may be recreated over 10 years as has been proposed by EBOP, does currently represent the Working Party only intending to recreate less than .06% of the lost local inshore coastal fisheries production and the export potential of a significant part of the Bay of Plenty fishery.

I believe that if we consider the monetary value alone of the Bay of Plenty's export fisheries production potential that could now easily be recreated, simply by re-flooding lowlands in isolation from pumping stations and by using abundant Kaituna River flow which is carrying a pollution load to the Coast and which could easily instead be settled and oxidized in those wetlands, then the 100 hectares proposed thus far to be re-flooded over 10 years is a very short sighted and inadequate aim.

In the WBOPDC Draft Long Term Plan for the future of Maketu, Gillian Payne, WBOPDC Policy and Monitoring Manager has stated, that the purchase of a Wetland Park would remain a priority and that the action to investigate the purchase of land for the development of a sub-regional Wetland Park, be confirmed by staff given reference to future sources of funding for an investigation into local coastal fisheries production.

We as a pioneering county drained those wetlands to produce butterfat and farm produce for export, but the coastal fisheries production that we destroyed in the process has vastly more export potential and so this must now be the overriding consideration of the Working Party, I believe. This is our chance to create an example of an increase in inshore coastal fisheries production in our area that could lead to a national action, to re-create enormous potential future overseas exchange earnings, from the export of snapper and other inshore coastal commercial fish species that are further up the coastal food chain from those wetlands.

Aiming at 100 hectares over 10 years is well short of the mark as a consequence of the significance of the monetary value to this region and to this country, of the potential fisheries exports that could easily be re-created. I suggest that the Working Party instead looks at 6,167.25 hectares of wetland that used to exist and does take all possible funding initiatives to recreate as much of it as possible and as soon as is possible.

Kindest regards,
Don Paterson
Natural Therapies/BOP Game Fishing Charters

25 April, 2007

Ruth Feist
Senior Environmental Planner
Environment Bay of Plenty

Re: Draft Working Party minutes 19 April 2007

Hi Ruth

Thank you for the Draft Working Party Minutes received. Although I missed the meeting I would like to comment on page 2, paragraph 3: Parameters that should be included in the model are; ...Nutrient levels (nitrogen and phosphorus).

I draw your attention to your meeting notes that were supplied prior to the 16 November 2006 Water Quality Focus Group meeting, which state in 1.3: Effects of the lakes on the Kaituna River and Maketu Estuary: Most of the dissolved nutrients in the Kaituna River downstream of the lakes come from sources downstream of the lakes (geological, agricultural, horticultural, urban and industrial).

2.3 Paragraph 2: After the discharge of effluent from the AFFCO NZ Ltd Rangiuru Plant, ammonium nitrogen levels also rise. Te Puke sewerage effluent is discharged to a wetland and seeps from there to the Waiari Stream.

2.3 Paragraph 3: Dissolved nitrogen levels in the lower river (i.e. The nitrogen component that would promote growth of plants and algae) is sourced from downstream of the lakes.

2.3 Paragraph 4: AFFCO adds to the phosphorus levels and the total of these effects results in a surplus of dissolved phosphorous in the river. The phosphorus in Maketu Estuary comes mainly from coastal waters. However in this area the Kaituna River has an influence on the composition of the coastal water.

2.3 5: However, there is already a surplus of dissolved nutrient in the lower river from sources downstream of the lakes.

3.3 2: The threat to Maketu Estuary will increase with increasing nutrient enrichment of Lakes Rotoiti and Rotorua.

The point that I now wish to make to the Working Party, is that those causing pollution of the Kaituna River that are highlighted above, could be made to help EBOP construct a meandering wetland system down either side of the Kaituna River, that did receive water at regular intervals from the Kaituna River buy overtopping the stop bank. If those Wetlands were planted in Raupo and other aquatic plants they could lower the Nitrogen and phosphorous content of the Kaituna River before it reached the Ocean. The meandering wetland ecosystem that could now be recreated on the south and western side of the lower Kaituna River course could eventually return into the lower Kaituna River.

The meandering wetland ecosystem that could now be recreated on the north and eastern side of the Kaituna River course could eventually overtop the stop bank into the back of Maketu Estuary and so create extensive opportunity for recreation of the coastal fishery production in this area with food chains that had used to exist and that had started from a large fresh water adult population of Inanga, Koaro, Kokopu, Bullies and Tuna. We could simultaneously lower pollution levels in the Kaituna River while enhancing our very exportable inshore coastal fisheries production.

Kindest regards,
Don Paterson
Natural Therapies/BOP Game Fishing Charters

30 March 2005

Willie Emery
Chairman
Maketu Taiapure Committee

Hi Willie

I suggest that Te Arawa Maori Trust Board does consider the information below and attached to this email with a view to approaching Maria Hiini as the oldest sibling in her family, at 11 Little Waihi Rd. Maketu, ph. 533 2668 with a view to their consideration for re-flooding land owned by both parties to the east of Maketu Rd. This would create wetland habitat and so could significantly increase the amount of whitebait, kahawai and other fish species including tuna (eel) in and around the Maketu Taiapure boundary. In doing so it could set a precedent for increasing the productivity of the New Zealand Inshore coastal fishery by creating an example for others to follow.

I see this as a possible first step in habitat creation, to reverse widespread drainage of coastal land that has occurred to date within a few kilometres of the coast, with a positive economic outcome as potential coastal fisheries production is far more valuable to this country than is general farm produce.

Applications could now be made by Maketu Taiapure to Environment BOP, Western BOP District Council, the Department of Conservation, Ministry of Fisheries, the Commercial Fishing Industry and to others for funding which could allow for the leasing of the land from the respective owners; planting of Raupo which Inanga have been recorded by Graham in the accompanying literature to like to live under and for consultation with Charlie Mitchell of 224 Ohauiti Rd. Te Uku, RD1 Raglan ph. 07 825 5122 who has studied whitebait extensively as a Scientist who was employed by DOC in Rotorua, and who is now as a commercial grower of Whitebait. He could possibly direct the feeding of Inanga with bacteria from treated effluent and so increase the production of whitebait at a comparatively low cost.

Pumping Stations could now be used to flood the area with fresh water from farm drains, as opposed to destroying lowland wetland habitat as they currently are designed to do. I believe that Western BOP District Council are planning a Sewerage Treatment Plant on adjacent land and this could perhaps in future be used to increase production by utilising the bacteria that is present in treated effluent to feed inanga, as could effluent from adjacent farms.

Kindest regards

Don Paterson
Maketu Taiapure Committee
HbT, SRF; SNTR
NZ Chartered Natural Therapies Practitioner

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Te Puke 3119
Ph 07 573 5533, 07 573 9403, 0274 517 947
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nat.opc@xtra.co.nz

9 February 2007

Phillip Wallace
C/o Ruth Feist
Environment Bay of Plenty
Box 364 Whakatane

Hi Phillip

Please find enclosed a Map of Maketu Estuary as I discussed with you following a Maketu Estuary Focus Group Meeting in the Maketu Fire Station on 1 February 2007. I have highlighted in green where I believe that an overtopping structure could be most effective in restoring Maketu Estuary by using Kaituna River flushing flows in conjunction with a salt water wedge from the sea and through Te Tumu Entrance of the Kaituna River on a rising tide.
Please determine a Weir length as well as height above low tide Kaituna River flow levels that would allow a sufficient mixed volume of pollution laden fresh Kaituna River water and Ocean salt water to enter Maketu Estuary and to fill the back half of Maketu Estuary and to flush sand from the mouth of Maketu Estuary on a falling tide and during times of peak Kaituna River flow and so stabilise the toe of Maketu Estuary Sand-Spit naturally where it is currently being narrowed by flow from the back of the Estuary and in isolation from flow from Papahikahawai Channel. I have also highlighted in green the 1971 subsidised rock protection, the dam blocking Papahikahawai Channel and the Papahikahawai Island Stop Bank as obstructions that I believe do need to be removed.
I envisage that at a minimum weir height built to the level of the Kaituna River at low tide, water from the Kaituna River and from the Sea would then having filled Maketu Estuary from the Kaituna River and through Te Tumu entrance of the Kaituna River from the Sea, then exit at Te Tumu.
I envisage that a Weir built for example to the height of 1 metre below the level of the lower Kaituna River during peak tide flows, would then allow the

back half of the Maketu Estuary to fill from that point but then have to exit in the main through the mouth of Maketu Estuary.
I have included copy letters that I had written to Alan Willoughby dated 19 August 1993 and to Bill Bayfield dated 24 September 2006 for your clarification of my ideas.
I have shaded a section on the Map in yellow so that you can see the area that I have referred to as Brain's 90 acres.

Kindest regards

Don Paterson
Natural Therapies/BOP Game Fishing Charters/Maketu Tiapure Committee/ BOP/Waikato Marine Recreational Fishers Association/Tauranga Charter Boat Association

----- Original Message -----
From: Don Paterson
To: shona@envbop.govt.nz
Cc: joy@envbop.govt.nz
Sent: Thursday, August 04, 2005 12:48 PM
Subject: Fw: Peter Ellery Organic Weed Killer

Hi Shona

At a Maketu Tiapure Committee Meeting last night it was revealed that Environment BOP via Kim Young had offered to supply the Committee with Roundup to control weed growth around Native Trees that we are planting adjacent to the lower Kaituna River, using Environmental Enhancement funding. The Committee voted last night to ask for Hitman an Organic Weed Killer to be supplied instead; on the grounds that it would be more environmentally friendly and would not leave toxic residue in the soil and so the food chain as I believe Roundup does.

I now invite Environment BOP to use the contact details below to replace the use of Roundup throughout the Bay of Plenty with Hitman for all our sakes.

Kindest regards

Don Paterson
Natural Therapies
28 Jellicoe St.
Te Puke
Ph. 07 573 5533

----- Original Message -----
From: Don Paterson
To: Elaine Tapsell
Sent: Thursday, July 21, 2005 3:27 PM
Subject: Peter Ellery Organic Weed Killer

Hi Elaine

Please pass the information on to Peter Ellery that there is an organic weed killer called Hitman as I do not have his email address. It is a non-selective

weed killer, derived from coconut palm oil. It leaves no residue in the soil and so could be more ideal for controlling grass growth around the trees that we recently planted adjacent to the lower Kaituna River than would be round-up which I believe will still be leaving residue in the environment after thousands of years have passed.

Hitman is available from Wet & Forget, 36-38 Apollo Drive, Mairangi Bay, North Shore, Ph. 09 476 4440, www.wetandforget.co.nz .

I also suggest that Maketu Tiapure might like to recommend to E.B.O.P. that Hitman could be an alternative to the synthetic chemical that they are currently using to control spartina grass in Maketu Estuary as that chemical is ending up in Te Arawa diets.

Kindest regards
Don Paterson

7 April 2004

The following is a suggested Course of Action re the establishment of Wetlands around Maketu Estuary in an attempt to greatly increase productivity of the coastal and the fresh water fisheries in the vicinity of Maketu Estuary, so establishing proof of a potential production increase Nationwide from similar habitat creation:

1. Present a Petition to Parliament for the creation of wetlands within a few kilometres of the sea adjacent to Maketu Estuary and alongside the Kaituna River course; supported by signatures gained from the majority of Te Arawa people and the public at large.
2. Address Environment Bay of Plenty re stopping the pumping of surface water off lowlands to the east of Maketu Estuary and so use Maketu Road as a dam to create permanent flooding of lowlands immediately upstream of Maketu Estuary where it is bordered by Maketu Road.
3. Ask Government to compensate farmers for the loss of their productive farmland in view of the potential creation of considerably more overseas exchange earnings via fisheries exports.
4. Ask Government to attempt to secure land owned by Des Burgess, Dennis Armstrong and Olive and Alan Brain adjacent to Maketu Estuary for wetland creation and allow Kaituna River water flood flows to permanently flood the area.
5. Establish extensive plantings of maritime marshland within upper Maketu Estuary boundaries to recreate galaxius spawning habitat connected to wetlands established.
6. Return the Kaituna River on a full tide to its original course through Maketu Estuary on both sides of Papahikahawai Island via a weir allowing it to maintain its Te Tumu exit to the sea with a low tide flow.
7. Petition Western Bay of Plenty and AFFCO Rangiuru to create extensive wetland water purification systems to reduce an effluent load that is currently being dumped by them into the Kaituna River.

Kindest regards

Don Paterson

Hi Peter,
Thank you for your reply. I would like to comment on the points that you raise and for clarity of reply I will do so immediately following your comments below:

----- Original Message -----
From: Peter Blackwood
To: 'Natural Therapies'
Cc: Clive Tozer ; 'ssmale@doc.govt.nz' ; Verna Arts ; Bruce Crabbe
Sent: Wednesday, March 03, 2004 12:54 PM
Subject: RE: Maketu Estuary Restoration

Don,

Thank you for copying this and I will record it on file:

Just repeating some comments.

1. The Papahikahawai channel will not work unless there is a major structure to block off the Kaituna mouth. Otherwise the preferential flow path is directly to the sea. Reply: The Preferential Flow Path will be directly to the Sea wherever reintroduction of Kaituna River Water to Maketu Estuary occurs, because Te Tumu Entrance must remain open to accommodate excessive flood flows during times of heavy rain fall in the Kaituna River catchment. The site that I have continually proposed for Reintroduction to occur is immediately above the Mole at the Kaituna River Mouth; opposite the most recently evident old Kaituna River course and also extending inland to the green privately owned pumping station. I propose that a concrete covered overtopping weir be constructed at minimal further public expense, to the height of the Kaituna River normal low tide level, where the existing roadway forms a stopbank that has been eroded and repaired, because the Kaituna River is trying to break through there on the outside of the river bend. This point is directly in line with a Kaituna River flood flow centrifugal force, which will help more water to enter Maketu Estuary than could otherwise occur. This could not happen through Ford's Twin Cuts. Because there is now much more flood flow through the Lower Kaituna River over a shorter period of time than used to occur before land clearance, land drainage and river channelization occurred, there is now sufficient flood flow to flush sand from the lower Maketu Estuary on a falling tide, as well as being able to partially escape to sea through the Te Tumu entrance. When the Kaituna River is not in flood there will be sufficient reintroduction occurring to slow infilling of Maketu Estuary via the Maketu Estuary mouth, so reducing sand intrusion into the Lower Maketu Estuary from the sea.

2. The Kaituna River has repeatedly in the past cut through to the sea during major floods. We have entered a phase of the Interdecadal Pacific Oscillation (IPO) that will contain an overabundance of floods and there would be a reasonable likelihood that the river (if reintroduced to Maketu via Papahikahawai Channel) would again cut through early on.

Reply: The Kaituna River has previously cut through to the sea during major floods, on the outside of the river bend as it turned behind the sand dunes and headed towards the Maketu Estuary entrance with a greatly increased volume. The fact that the river flow was turning against the back of the spit caused the spit to be eroded. If flow is parallel to the spit through Papahikahawai Channel and falling towards Maketu Estuary entrance and also bending around the natural curve of Maketu Estuary Sand Spit, it will widen and also protect the spit from erosive flow from the back of the estuary, that used to flow through the area that has been dammed by the 'subsidised rock Protection'. That flow has been replaced to a degree by flow from Twin Cuts. The subsidised rock protection which forms 1 of 2 roadways to Papahikahawai Island, as well as the stop bank on the island are in fact mechanisms for eliminating wetlands and for protecting conventional farmland. Lowlands within 3 kilometres of the sea could instead, ideally be farming Inanga and kokopu and eels, so supporting this country's greatest farmland, the 200 mile salt water economic zone that surrounds this country.

3.The option of a very substantial increase in flow through the twin cuts has merits that should be seriously considered – the point you raise about erosion on the inside of the spit and siltation can be mitigated.

Reply: Maketu residents do not want to have their beautiful naturally formed estuary further detracted from, by engineer's intent on building something unnatural and ugly like a solid enforcement. The new Beach Road Rock Wall is a recently completed example of this in my opinion. Maketu used to be unique in that when driving on Beach Rd. one felt the magic of the place by being so close to the natural environment that has now been partially hidden behind a rotten rock wall which is crumbling into and further infilling the estuary.

In my Appeal Court hearing and in the detailed letter to Alan Willoughby which followed and in previous writings to DOC and to Jeff Jones of EBOP, who is reported to have said to the late Mr. Oliver Brain that the Kaituna River would never be returned to Maketu Estuary while he was in a position of authority; I explained at length how Increasing the input flow to Maketu Estuary through Ford's Twin Cuts would destabilize the Maketu Estuary spit and so cause severe Infilling of Maketu Estuary with wave washed beach sand. I lost the Appeal Court hearing while not being able to purchase the testimonies of expert witnesses or the legal representation that EBOP could afford with public funding. I then read defamatory comments about myself reported in both the Te Puke Times and in the Bay of Plenty Times. We who reside in Maketu have witnessed exactly what I had previously predicted would happen then occur.

4. I do not agree that the erosion of the spit causes such an increase in tidal prism that measurable siltation occurs. A significant proportion of any eroded sediment would be transported by the current through the estuary mouth. Please clarify the dates that breach of the spit occurred due an interior current in recent years. Are you sure on this point?

Reply: Peter, I am absolutely certain beyond any doubt whatsoever that this has occurred, as I had predicted that it would and so is the Maketu Taiapure Committee. The Erosion of the spit from behind on a falling tide and on the outside of a bending current path is the first stage of destruction only. Because the sediment being transported downstream on a falling tide is slow moving, it settles and in- fills the lower estuary and is not carried out of the estuary, as could occur during times of peak flood flow. Contrary to this; wave washed beach sand in suspension on a rising tide is moving much more quickly and so it is transported into the estuary, building a larger flood tide delta with help from sand that had been eroded from the back of the spit and dumped by an insignificant outward flow.

As the sand spit is eroded from behind it is narrowed and then during a low pressure system with a higher than normal tide, the spit is overtopped. Had the spit remained wide enough and protected by a Papahikahawai Channel flow, the wave washed beach sand would simply be deposited on the spit so increasing its dimension. However when the spit has been eroded from behind and narrowed by current flow from the back of the estuary, bending against the back of the spit and without the protection of a Papahikahawai Channel flow, that wave overtops the spit and quickly erodes a new entrance into Maketu Estuary. It causes major infilling with wave washed beach sand to occur, resulting in a significantly increased flood tide delta, putting more pressure against the back of the spit on a falling tide. I and others have witnessed this first hand and I believe that it may have been reported in the Te Puke Times. I even saw a surfer surf through the gap that had just been formed by overtopping and years later I met the man in my Shop. If you want dates I suggest that you advertise for Testimony. I have a photo somewhere and I will look for it for you; but it seems ridiculous that EBOP could be so far out of touch with what has happened at Maketu in recent years and since the Appeal Court hearing. I believe that I have seen the spit being breached twice since my Appeal Court hearing loss and since Ford's Twin Cuts flow has been Increased and made to flow out to sea through Maketu Estuary by EBOP.

I wonder if EBOP now has any legal obligation to undo the damage that it has caused to Maketu Estuary, especially in the face of my Appeal Court hearing predictions. At the very least I expect that the Appeal Court decision to be overturned in favour of myself and in an ideal world I could be compensated for the public loss of credibility that I was forced to endure.

In no way do the preceding comments disrespect the important viewpoints of the Taiapure and yourself. They simply put some

perspective on options.
Reply: Thank you very much for your interest.

Kindest regards

Don Paterson

I hope these comments are of assistance.

Kind regards

Peter Blackwood

-----Original Message-----
From: Natural Therapies [mailto:nat.opc@xtra.co.nz]
Sent: Tuesday, 2 March 2004 5:20 PM
To: Peter Blackwood
Subject: Fw: Maketu Estuary Restoration

Hi Peter,
Please find enclosed a copy letter to DOC which is further to my years of attempting to see ideal Maketu Estuary Restoration occur. I have previously invited you to view my copy letters that are posted on my website home page www.gamefishingcharters.co.nz and which I believe do contain a recipe for the creation of significant national wealth and a vastly increased fisheries production.

Kindest regards

Don Paterson

From: Don Paterson
To: ssmale@doc.govt.nz
Sent: Friday, February 13, 2004 5:07 PM
Subject: Maketu Estuary Restoration

Hi Simon

It was reported in the Minutes of the Maketu Taiapure Committee meeting dated 3 December 2003, that you had said that the 1998 Partial Diversion of Kaituna River water into Maketu Estuary had had no bad effects, but no good effects either. I strongly question this view because I have observed that since flow has been increased around the back of the Estuary from Twin Cuts; significant erosion has been made to occur to the back of the toe of the spit, which has resulted in major infilling of the lower Estuary.

It has caused the Flood Tide Delta to increase in dimension,
so forcing concentrated erosive flow on a falling tide against the back of the toe of the Spit and so then wave washed beach sand to

enter Maketu Estuary, as the Spit has been breached on 2 separate occasions.

There is now as a result, approximately half an acre of sand forming part of the increased dimension of the toe of Maketu Estuary spit which used to be water within Maketu Estuary boundaries. That sand came from the beach that used to exist in front of Maketu Surf Club. The infilling of Maketu Estuary has been a direct result of the manipulation of flow regimes by EBOP since the Kaituna River was forced to flow out to sea at Te Tumu entrance.

Elaine Tapsell reported to you at the Taiapure Committee meeting that there was a strong local voice presented to Environment Bay of Plenty to put the Kaituna River back, with the choice of opening Papahikahawai Channel.

Frank Maika said that the focus must be on the number one option of returning the river flow. (I.e. Put things back how they were naturally before engineering interference detracted from the estuary).

Blackie McRae felt that it would flush better if the backwater beside Boy Corbett's place was opened up so that the river could have better access to the estuary. I offer the counter view to you; that this option has been tried in the past by consulting engineers at considerable public expense and it has proven to be a dismal failure. This failure had been predicted by the late Mr. Oliver Brain and by me in writing, before the work was carried out.

You are then reported to have said that you appreciate this clear message. I sincerely hope that you have not ignored the previously reported strong local voice presented to EBOP. I believe that we must aim at restoration of Maketu Estuary by using original flow regimes that had existed before the Kaituna River was forced out to sea at Te Tumu and before engineering manipulation failed to successfully reintroduce water to Maketu Estuary via Ford’sTwin Cuts.

Clem Tapsell is reported in the Maketu Taiapure Committee minutes as saying; to operate properly you need Papahikahawai Channel open as well as Fords Cut to keep the water from pounding against the back of the sand spit. I hope that you appreciated this clear message when you make your submission to Parliament.

Gerry Kissling is reported in the Maketu Taiapure Committee minutes as saying that older people were worried that dredges would destroy the seafood. I suggest that they are correct again: They had not wanted the Kaituna River removed from Maketu Estuary in the first place and they were ignored to the detriment of the Maketu Estuary. I suggest that we should consider their views. There is now an extensive bed of pipi growing in the lower estuary which would be destroyed by dredging. Alternatively Kaituna River flood flows could remove the sand from the

lower Maketu Estuary as it has previously proven to be able to do, without detrimental effect on the pipi.

You are reported to have said to the Maketu Taiapure Committee meeting that it would cost over $6 million to raise Kaituna River stop banks and then also $1 million per year for upkeep, to allow the majority of Kaituna River water to again flow through Maketu Estuary. I say in response, so what, as that is a pittance compared to farm produce already exported and rates already collected from swamplands reclaimed. I shudder to think how much money this country has lost through draining its swamp lands within a few kilometres of the sea, so removing 80% of the whitebait lava that used to enter the coastal food chains and so support the coastal fisheries resource that used to exist.

Kaituna roughly translates to eels for food and they have largely been eliminated from the diet of local Maori people because their same habitat has been destroyed. The irony is that the butterfat that has replaced the potential fisheries resource is worth far less to this country's economy than the fishing industry and it's offshoots like tourism could have been.

I for one would like to see stop banks and pumping stations eliminated and a return to coastal wetlands supporting 2 of this Country's most exportable commodities, being fisheries and tourism.

Those same wetlands could be purifying effluent and runoff before it entered the ocean. I believe that it could all start with Maketu Estuary restoration if it is done in the best possible way, as per my previous correspondence with DOC and EBOP and including the Appeal Court case notes that I have previously mentioned to you and the widely distributed letter to Alan Willoughby.

Kindest regards

Don Paterson

----- Original Message -----
From: Don Paterson
To: ssmale@doc.govt.nz
Sent: Tuesday, September 30, 2003 3:14 PM
Subject: Re: Maketu Estuary

Hi Simon

Thank you for your email. I suggest to you that EBOP could ideally undertake hydraulic modelling of partial return only; but also significantly increase Kaituna River flow to Maketu Estuary via Papahikahawai Channel

I do not believe it to be necessary or practical to return the whole Kaituna River to Maketu Estuary via Papahikahawai Channel in isolation from a Te Tumu exit to the sea, because of potential peak flows due to unpredictable rain fall. The hydraulic model in this instance is destined to fail from the outset

in favour yet again of the Twin Cuts option; which is and has now been proven to be, destructive to the spit that was created by and is protecting Maketu Estuary from the ocean. This has caused infilling and deterioration of the Estuary.

I have recorded my opinions at length in previous year's correspondence and I have posted some of them on my Web Site www.gamefishingcharters.co.nz under Copy Letters numbered 3, 45, 21, 19, 2, 4, 6, 9, 10, 11, 12, 13, 14, 16, 23 and 26 for our easy reference. I invite your attention to them.

I see ideal Maketu Estuary restoration as being easy to achieve and potentially beneficial to the New Zealand economy long term, if it is done correctly.

I see Twin Cuts attempted introduction and subsequent attempted reintroduction, that has continually failed and caused erosion of the back of the toe of Maketu Estuary Spit and so infilling of sand, to be wasteful and an irresponsible use of public funds.

I believe that if individuals within EBOP do continue to sabotage Maketu Estuary restoration potential by focusing on introduction via Twin Cuts, then they should individually be made to pay for the funds that they have wasted thus far and for the free time that we are all putting into this saga.

If EBOP does wish to sabotage Maketu Estuary restoration in favour of creating dry land for development, then they should come out and say it so that they can be judged individually by a public at large.

I lost the Appeal Court hearing because I could not afford the expert witnesses that DOC and EBOP did purchase with public funds, in a miss-match of judicial bullying as I saw it, but I have been proven correct in my predictions by sand movement.

I invite you to study my Copy Letters. I am now very appreciative of your interest at last and I wish you all well in your attempts at this exciting habitat restoration potential.

Kindest regards

Don Paterson

Hi Cloe

Further to my copy letters sent through on Friday, please also make available to Ken Tarboton Drainage Engineer and to your Manager Katarina Maki, my letter to Alan Willoughby that does detail why the 1928 construction of Ford's Twin Cuts had been destructive to Maketu Estuary.

I had appealed the DOC lead EBOP decision to force more water through Ford's Twin Cuts because I could see that it would accelerate destruction of

the eastern end of Maketu Estuary spit and cause increased beach sand intrusion into Maketu Estuary.

I am subsequently delighted that EBOP has at last recommended re-introduction of some Kaituna River flow to Maketu Estuary from near the Te Tumu exit of the Kaituna River and via Papahikahawai Channel.

I believe that an overtopping structure of significant dimension could now be built which could allow far more Kaituna River water to enter Maketu Estuary than would the box-section culverts that have been proposed.

A bridge could maintain the Ford Rd. connection with the beach or the overtopping structure could be built like a spill-way and could direct spilled water to the old river course and then turn it towards Papahikahawai Channel.

If EBOP is going to further consider increasing Kaituna River flow to Maketu Estuary via Ford's Twin Cuts in isolation from a simultaneous Papahikahawai Channel flow, then I am going to have to also consider re-entering the Appeal Court to have the original decision over-turned.

There is now physical proof that what I had predicted had been exactly correct despite the Judge having determined in his closing that EBOP Engineers were more expert.

I will also consider seeking compensation through the Court from EBOP for deformation of character that was caused to me and to my now deceased immediate family members by that court decision and by the false evidence given to the Court by EBOP:

1. That Brain's held a water right across Papahikahawai Channel.

2. That EBOP Engineers did not believe that increasing Kaituna River flow to Maketu Estuary via Ford's Twin Cuts would accelerate erosion and narrowing of the toe of the spit followed by subsequent wave over-topping and infilling of the lower estuary with wave washed beach sand.

I am now keen for Ken Tarboton to consider that if Maketu Estuary is again mostly filling with Kaituna River fresh water as well as with Te Tumu entrance salt water via the Papahikahawai Channel and via Ford's Twin Cuts and if there was a weir in place to stop most of it from exiting via Te Tumu, then there would be far less sand intrusion through Maketu Estuary mouth.

If the Te Tumu over-topping structure/weir/spillway was of sufficient dimension to allow the occasional significant flushing flood flow to enter Maketu Estuary on a falling tide then it would have enough energy where it turned against Beach Rd. to carry sand from and so deepen the lower estuary while stabilizing the Maketu Estuary Spit.

Kindest regards

Don Paterson

Maketu Tiapure
Chairman History Focus Group
Kaituna River & Maketu Estuary Management Strategy

-----Original Message-----
From: Don Paterson [mailto:nat.opc@ihug.co.nz]
Sent: Saturday, 7 December 2002 19:49
To: Option4
Subject: Maketu Estuary

Attachment from Don Paterson

----- Original Message -----
From: Scott
To: rda259@paradise.net.nz ; rbaker@nzf.co.nz ; Paul Barnes ; Paul Barnes ; paulbatten@xtra.co.nz ; jchib@xtra.co.nz ; ppv@xtra.co.nz ; dcraze@xtra.co.nz ; Grant Dixon ; jason@ffowcs.co.nz ; t.gerard@xtra.co.nz ; dcglass@xtra.co.nz ; greenmarine@actrix.co.nz ; susanh@kcg.co.nz ; philhoare@xtra.co.nz ; John Holdsworth ; Willekirk@btopenworld.com ; scott@wilmac.co.nz ; orman.riversedge@xtra.co.nz ; ppv@xtra.co.nz ; trea@xtra.co.nz ; romeril@attglobal.net ; Bill Ross ; stee@mortontee.co.nz ; jillandpaul@paradise.net.nz ; kwalshe@xtra.co.nz ; wardb@akcity.govt.nz
Cc: nat.opc@ihug.co.nz ; donpaterson@popmail.com
Sent: Sunday, December 08, 2002 10:37 AM
Subject: FW: Maketu Estuary

Dear team

This man, Don Paterson makes good points, and he makes them well - interesting angles. This is good reading and worthy of comment. There is an incredible amount of background information available to support and substantiate the points Don makes.

Regards

Scott

2 November, 2002

Dave Allen
Senior Policy Analyst/Fisheries Advisor
Ministry of Fisheries
Box 3437 Auckland

Hi Dave

We recently met at a Maketu Tiapure Committee meeting. I was delighted to learn of your interest in the fresh water fishery. I have long held the belief that if we restore the balance between the fresh and the salt water fisheries, then we will right a lot of this country's financial woes with increased fisheries production.

I invite you to read copy letters numbered 11, 12, 13, 14, 15, 16, 21, 26, 34, 39, 40 and 41 on my web site www.gamefishingcharters.co.nz. I would greatly appreciate your interest and your comment on their content.

I see potential Maketu Estuary restoration as being the ideal opportunity to prove potential rebuilding of coastal fisheries production with the establishment of wetland habitat in close proximity to the estuary; which could also double as weed filled ponds to purify effluent after treatment and before it entered the culturally sensitive Maketu Estuary waterways.

I have been unable to email you at the address on the business card that you gave me.

Kindest regards

Don Paterson

10th March, 2002

Mr Chris Jenkins
Regional Conservator
Department of Conservation
P O Box 1146
ROTORUA

Dear Chris,

Please note the latest in a long saga of letters that I have written to the Department of Conservation, in an honest attempt to see Maketu Estuary restoration occur, in the best possible way. Please do your utmost to ensure that this does now happen. I believe that there is now imminent danger of habitat destruction and so further habitat loss.

Yours faithfully

Don Paterson

6th March, 2002

Jason Ward
Planner
Department of Conservation
P O Box 1146
ROTORUA

Dear Jason

hereby request that the Department of Conservation does initiate co-operation between itself, Environment Bay of Plenty and Western Bay of Plenty District Council, to model, design and construct reintroduction of Kaituna River flow to Maketu Estuary, in the best possible way and with consideration of all of the points that I raised in my 19/8/93 correspondence, with Mr Allan Willoughby.

I further ask you to note that all of the observations and predictions that I made at the time of my unsuccessful Appeal Court Hearing; due to my inability to employ expert witnesses and so compete on even terms and which I later recorded in my letter to Mr Allan Willoughby, have now with hindsight been proven to be correct and accurate.

Reintroduction of Kaituna River flow through Twin Cuts, has caused destabilisation of the Maketu Estuary sand spit, by current flow initiating at the back of the estuary and so a significant amount of additional infilling has occurred, both from the back of the spit and from the sea with subsequent wave overtopping.

I now observe daily from my home on Arawa Avenue, Maketu, that subsequent additional erosion to the back of the spit caused by a now much bigger flood tide delta and as a result of reintroduction of additional flow from the back of Maketu Estuary destabilising the toe of the spit, is about to cause imminent wave overtopping and so significantly hasten the demise of Maketu Estuary.

A significant flow via Papahikahawai Channel must now, I believe, be allowed to prevent this from occurring. Brains 90 acres which is maintained below sea level by pumping water from it and which would make an excellent Marine Reserve for which funding is available in the Regional Plan, could act as a bladder, receiving Kaituna River and high tide flood flows over a river bank overtopping structure, without destabilising the sand dunes at that point: Then released through Papahikahawai Channel that flow would strengthen and protect the spit from erosion from behind by the estuary current flow that is initiating at Ford's Twin Cuts.

During Kaituna River flood flows the Papahikahawai Channel flow could again flush sand from the lower Maketu Estuary as it previously did in combination with flow from behind Papahikahawai Island, before BOP Regional Council built Ford's Twin Cuts to the now obvious demise of the waterways of Maketu Estuary.

Low tide flows could continue to exit at Te Tumu and so maintain that entrance as a safety valve, to prevent flooding in times of heavy rainfall moving through the lower Kaituna River system. That entrance would also be maintained for boating.

Kaituna River flood flows are now significantly greater than they were before land clearance and stream channelisation, so there would be ample flow to flush sand from Maketu Estuary, as well as maintaining the stability of the Kaituna River mouth at Te Tumu.

Yours faithfully

Don Paterson

Sent: Monday, 22 July 2002 11:27 p.m.

To: cjenkins@doc.govt.nz

Subject: Fw: don paterson willoughby letter march 2002

Dear Chris,

I am disappointed that I missed the meeting that you had with the Maketu Tiapure Committee. That committee had previously voted to support my proposal which most certainly did not involve Twin Cuts, or previously completed works west of that point.

I have spoken with Mr. Alan Brain re my opinions on ideal Maketu Estuary restoration. He is also adamant that Twin Cuts was a total waste of time and of tax-payers money.

Alan is prepared to meet with engineers to discuss their opinions as to how we could achieve ideal Maketu Estuary restoration for the good of the community at large. I would also like to be present at those meetings.

I therefore propose that we go with my accompanying submission, utilising not only his 90 acres initially, but also let us consider purchasing his entire property and that of his neighbour Mr. Dennis Armstrong whose property also borders the upper Maketu Estuary.

That lowland is bordered by the estuary stop bank on one side and by the road in need of repair on the other. It would make ideal wetland inanga habitat if flooded across where Twin Cuts is currently situated; from my proposed reintroduction of Kaituna River flood tide and much more significant flood flows, on to the 90 acres. Maketu Estuary maritime marshland inanga spawning habitat could be created in the upper estuary with very little planting effort as we saw close to Maketu Road some years ago.

These engineering works could create a working model that could demonstrate the potential rebuilding of the very valuable coastal fishery. That could then lead the way to wetland establishment around our entire coastline within a few kilometres of the sea, where 80% of the parents of our once prolific saline whitebait population used to live.

Yours faithfully,

Don Paterson

ORGANISATION DETAILS

1. **Name of Organisation**
   Bay of Plenty Game Fishing Charters

2. **Address**
   28 Jellicoe Street
   Te Puke

Telephone
(0274) 517-947
Fax
(07) 573-9363
Email
nat.opc@xtra.co.nz
Website
www.gamefishingcharters.co.nz

3. **Contact person for this application**
Don Paterson
Address
28 Jellicoe Street
Te Puke 3119
Telephone
(07)573-9403 wk.
(07)533-2036 res.
(0274)517-947
Fax
(07)573-9363
Email
nat.opc@xtra.co.nz

4. **State your organisation's purpose and objective**
To effect efficient management within Maketu Estuary boundaries of Kaituna River flow through original wetlands, enhancing their natural character and keeping the surrounding area safe from floods and erosion.

5. **State the year your organisation was formed**
1996

6. **How many members of your organisation will be involved in the project?**
1 Director, plus employees as required.

FINANCIAL DETAILS

1. **State whether you are a trust, incorporated society or other (specify)**
Private Company.

2. **Is your organisation GST registered? If yes, state GST Registration Number** 70628937

3. **Funding will only be paid by Environment BOP to an organisation's recognised bank account**
Name of bank
WestpacTrust

Branch
Te Puke
Account name
Natural Therapies Ltd Trading As Bay of Plenty Game Fishing Charters
Account number
030474045206800
The method and timing of payments will be at the discretion of Environment BOP

PROJECT DETAILS

Describe your environment project:

1. **Location**
   The area of lowland bordered by Ford Road, Twin Cuts river diversion, Papahikahawai Island and the beach sand dunes and including Maketu Estuary.

2. **Project description**
   Purchase privately owned land. Remove pump currently keeping water off the land. Construct a public walkway with informative signage. Construct an overtopping structure where the Kaituna River last bends to face the sea that will allow the top fresh water layer of the Kaituna River flow to overtop the structure at high tide and to flood the area of land described above. (Please refer to the accompanying copy letter to Alan Willoughby dated 19/8/93.) Re-establish maritime marshland in the upper estuary.

3. **Project plan (steps/tasks needed to complete the project):**

   1. Purchase the land
   2. Remove the pumping station
   3. Construct a walkway with informative signage
   4. Build and overtopping structure
   5. Build a low weir across Kaituna River at that point? (Only if deemed necessary)
   6. Re-establish maritime marshland in the upper estuary.

   I note from a letter that I received from Mr John McIntosh, Manager Environmental Investigations for Director Regulations and Monitoring that Environment BOP has noted in the Regional Policy Statement that "coastal marine ecosystems are under represented in the regional reserves network, which indicates that EBOP would be willing to be involved in the creation of marine reserves". I therefore envisage that Maketu Estuary which is currently largely devoid of fish life could become a marine reserve without upsetting anyone i.e. for pelagic fish.

4. **Timing (timeframes, stages, completion):**
   Purchase the land described on page 13, Site Map, at the completion of the current 3 year lease. Then remove the pumping station and construct

a public walkway with educational and informative signage. Then construct an overtopping structure to allow high tide fresh water to enter the aforementioned area of land and travel through Papahikahawai channel on a falling tide, stabilizing the Maketu Estuary sand spit and flushing sediment out of the lower Maketu Estuary. Then re-establish maritime marshland in the upper estuary.

BUDGET PROPOSAL

All amounts included in your budget proposal should exclude GST.

Our Organisation's Contribution	**Environmental Enhancement Fund Contribution**
Management	
Labour (hours and cost) 1000 hours - $226,000	Remove pump, construct walkway and signage, construct overtopping structure. Re-establish maritime marshland.
Materials $100,000	Timber, Paint, Reinforced Management concrete, rocks & metal
Rental - ? was	Perhaps lease land if Management unable to purchase
Consultants $175,000	Re-construct walkway and signage, overtopping structure
Transport $20,000	Machinery and contract labour
Other (specify) $1,000,000	Land Purchase Management

Sub Total = $1,521,000 (amount applied for)

SCREENING CRITERIA

- Our organisation operates within the Bay of Plenty
- The activity or project will be carried out within the Bay of Plenty
- We agree that Environment BOP can refer to the project in promotional material
- We agree to monitor the progress of the project and report to Environment BOP six monthly and at the completion of the project on progress and outcomes

- We are committed to completing the project and to ongoing maintenance of any structures or works created
- Our project is consistent with the purpose of the fund as outlined on page 2

ASSESSMENT CRITERIA

1. **Sustainable Management – explain how your project will maintain or protect some aspect of the Bay of Plenty's environment (coast, wetlands, lakes or rivers and their margins, heritage features, outstanding landscapes, historical or archaeological sites or the habitat of indigenous plants and animals) for the benefit of present and future generations.**
   Please see accompanying copy letter to Allan Willoughby dated 19/8/93. I intend that my project will stabilise an increasingly unstable toe of Maketu Estuary spit which was made more unstable by manipulating Kaituna River flow through Ford's Twin Cuts River diversion. Habitat for indigenous plants and animals and fish will be increased significantly and protected by stabilizing Maketu Estuary Spit.

2. **Community awareness – explain how your project will heighten community knowledge and/or promote active involvement of people in environmental issues.**
   The project will demonstrate to the public how we can improve the environment. It will provide educational opportunity by allowing students to do studies as well as informing the public by way of signage. The project will provide local employment and eco tourism opportunities.

3. **Heritage – heritage helps us define who we are and gives us a sense of where we come from. Heritage includes natural character, ecological values, historical values, Maori values, community values and special interest, natural feature and landscape values. Explain how your proposal will advance heritage in the region.**
   My proposal will advance heritage in the region by demonstrating wetlands ecological value by giving them an economic value that is currently unrecognised. Eco tourism opportunities will be created while recognising Maori and community values around a natural feature that had previously existed before engineers changed the environment with river diversion. My proposal will be reinstating the region's natural heritage while maintaining the safety and the necessity of the Te Tumu entrance of the Kaituna River system.

4. **Integrated Management – explain how your project will promote co-operation between your group and Environment BOP.**
   Environment BOP will be invited to monitor the progress of the project as will the Department of Conservation and both will be invited to participate in all aspects of the project as desired.

5. **Regional Benefit – how will your project benefit the community and/or the region?**
   The project will become nationally and internationally recognised as a

success and so attract eco-tourism and something for New Zealanders to visit and be proud of. The community and the region will benefit from these visitors and their spending. An increase in local inshore coastal fisheries commercial production and recreational angling opportunity will have flow-on effects.

6. **Community Participation – explain how your project will involve participation by people in the community.**
People in the community could be employed to plant maritime marshland in the upper estuary, to recreate habitat which has been destroyed by previous Regional Council management of the Maketu Estuary ecosystem. The local community could be employed to construct a boardwalk and signage, to remove the pumping station and fences; to construct the overtopping structure; to remove the Papahikahawai Island stop bank and the 1971 subsidised rock protection in later years, once lower Maketu Estuary channels had stabilized and perhaps to construct a low weir across the Kaituna River in later years if that was deemed to be desirable.

7. **Strategic Focus – explain how your project will contribute to the achievement of objectives and policies set out in Environment BOP's Strategic Plan, Regional Policy Statement or Regional Plans.**
Environment BOP's Strategic Plan is about working with communities for a better environment in our region, including the effective and efficient management of the region's land, air, water, coastline and territorial sea. The Regional Plans aim at sustainable management i.e. protecting resources in the region for present and future generations, with management, development and protection.
My project will work with the local community to create an example of a better environment in our region from effective and efficient management of land and water within the Maketu Estuary boundaries to stabilise part of the high quality coastline and also the natural character of Maketu Estuary wetlands and their interaction with the Kaituna River margin.

8. **Innovation – explain whether your project will use tried and true methods or will trial new methods in environment management.**
My project is based upon research undertaken by myself of former accounts of the state of Maketu Estuary and the lower Kaituna River. I intend to reinstate original estuarine ecosystems with a Kaituna River flow that used to exist in a manner that used to exist before Kaituna River diversion from Maketu Estuary occurred.

LOCATION OF PROJECT

See attached. The upper Maketu Estuary and the lower Kaituna stop bank.

1. **Will the project be carried out on private or public land or a combination of both?**
A combination of both.

2. Specify details of the land ownership.
Alan Wesley Brain
Violet Mary Brain
Land Information New Zealand

3. Explain how you will monitor your project.
A data base of photographic records will be kept and a report submitted to EBOP every 6 months demonstrating the stabilization of Maketu Estuary Spit, of estuary channels and erosion of sand from within the lower estuary and out to sea.

List here any more Information you would like to give us that would help in making a decision about your application.
Please see accompanying letter to Alan Willoughby dated 19th August, 1993.

How did you hear about the Environmental Enhancement fund?
Newspaper advertisement.

Sent: Monday, December 09, 2002 9:16 PM
Subject: Hi Owen - Maketu Estuary

Hi Owen

Thanks for the research regarding estuaries. I took the hard copy to the Maketu Taiapure Committee meeting on Wednesday night. I assume that the Secretary Elaine Tapsell has got more time to research than I have, because I have not got any and being Maori she could potentially be more able to attract funding. I am tangata whenua pakeha; ineligible for funding I believe.

I do not open attachments on this computer for fear of virus, so it was good to get the hard copy, thank you.

My intention is to initiate flooding of a significant portion of low lying farmland upstream of Maketu Estuary to provide habitat for Inanga. They would then spawn in the estuary and start oceanic food chains, which could then by example set the scene for enormous potential expansion of this countries coastal fisheries production and overseas exchange earnings.

This could be most beneficial to Maori because of your part-ownership of that fishery. Land based agricultural production is worth far less to this country in overseas earnings than is oceanic production. We have to actively promote sales of butterfat amidst considerable and debatable consequences to the consumer, whereas we cannot ever meet the demand for fish.

I believe that there is potential in Regional Councils either purchasing or leasing suitable land for environmental enhancement, to create public wealth in a region through potentially increased coastal fisheries production.
Maketu Estuary which is currently largely devoid of fish life, could I believe provide the ideal example of potential increase in fisheries production

because any change to the fishery in the immediate vicinity of Maketu Estuary could be easily monitored.

We could start by flooding land bordering the estuary that is currently owned and farmed by Te Arawa Maori Trust Board, Doug Pamment, Red Barker, Des Burgess, Dennis Armstrong, and Violet and Alan Brain. These farmers could be paid by Environment BOP at a similar rate to their current earnings from their land, to farm inanga, or if they preferred could sell to Environment BOP.

Whitebaiting around Maketu Estuary could be banned so as not to detract from an experiment to judge a potential increase in oceanic production by recreating food chains that used to exist.

Inanga prefer to spawn in maritime marshland and there is already some maritime marshland in Maketu Estuary part of which is owned by Red Barker. Extensive marshland that used to exist before fresh water flushing flood flows were removed from the estuary to cater to large areas of rateable farmland upstream could be replanted.

Environment BOP has collected considerable rates over the years from farmers who have benefited from their drainage scheme, at the expense of the Maketu Estuary environment. In fact wetlands that used to surround Maketu Estuary and stretch inland for miles are now having water pumped from them, so removing their natural habitat from this countries potential oceanic production.

That potential production used to exist before most of this Countries coastal lowlands and swamps were drained. The parents of 80% of the whitebait that used to exist lived within a few kilometres of the coast.

We are inevitably witnessing an increase in population near our coastline. Sewerage that is currently being partially treated and pumped into the ocean to I suspect promote the growth of sea lettuce, could instead be further treated in wetland habitats. The greater the habitat that is created then the greater the purification potential and the more inanga and eel and giant kokopu that could also exist.

If Environment BOP has now got the good sense to protect Maketu Estuary spit with a Papahikahawai Channel flood flow, then Maketu Estuary could be preserved indefinitely to continually enhance the coastal fishery in this area with its spawning habitat. It could also provide a stable Estuary mouth for an ever-increasing boating population.

My business address, which does get checked daily, is nat.opc@xtra.co.nz and my postal is 28 Jellicoe St. Te Puke 3119. My web site address which contains the background to this letter, in the form of previously written copy letters, is www.gamefishingcharters.co.nz. My contact telephone numbers are 07-573 9403 wk. 07-533 2036 res. 0274-517 947 mobile.

We will have to put a line in the water again one of these days, despite the fact that there are considerably less fish around than there could be.

Kia Orana

Don Paterson.

----- Original Message -----
From: Don Paterson
To: jtward@doc.govt.nz
Sent: Wednesday, April 23, 2003 3:09 PM
Subject: Re: Maketu Estuary

Hi Jason

Someone said that EBOP are to spend $100,000 on the Mole that stabilizes the Kaituna River mouth. Is that true and if it is, could that work incorporate an overflow structure to allow some Kaituna River flood flow to again re-enter Maketu Estuary on a high tide, via the old river course?

The resultant flow would I believe over time stabilize the Maketu Estuary spit by protecting it from erosion from behind. Access to the mole and the beach could be maintained with a bridge.

It is now obvious to all that the spit is again threatened by wave overtopping, due to erosion from behind from the back of the estuary on a falling tide and is protected only by it's height at it's narrowest point. That erosion was I believe accelerated by the reintroduction of Kaituna River flood flow to Maketu Estuary through Ford'sTwin Cuts by EBOP and so against the back of the spit, as I predicted in my previous Appeal Court hearing and copy letters. I had attempted to prevent the wasteful Ford's Twin Cuts reintroduction error being made, in favour of using Papahikahawai Channel.

By forcing water introduced through Ford's Twin Cuts flap gate structures to drain to the sea through Maketu Estuary, erosion of the back of the spit was caused. This narrowed the spit and so accelerated the most recent wave overtopping and subsequent destruction of the toe of the spit, and major infilling of the lower estuary with beach sand while the toe of the spit rebuilt itself. A much larger flood tide delta now puts additional pressure further up the spit on a falling tide.

A portion of the lower estuary is now dry sand and is part of the large toe of the most recently formed sand spit. Because of the destruction of the toe of the spit, that sand washed off the beach in front of the surf club exposing rocks where there was once a beach and it is now in the estuary. If overtopping is allowed to occur further to the west were the spit has narrowed again, because of the flood tide delta, then significantly more beach sand will further in-fill the estuary. This has thankfully been slowed by the removal of one of the Flap Gate structures.
If high tide and flood flows are reintroduced to the estuary via Papahikahawai Channel, then we can expect to see the currently narrowed portion of the spit

widen, so protecting the estuary from the threat of wave overtopping.

Tidal reintroduction through Papahikahawai Channel will I believe stabilize the spit and so the estuary's future. Occasional flood flows through Papahikahawai Channel will flush sand from the estuary flood tide delta and back out onto the beach through the estuary mouth. This will however be dependant upon the size of the overtopping structure and the volume of flood flows that it can accommodate.

Hence my wondering if you are now going to do the work necessary to stabilize the Maketu Estuary spit with a Papahikahawai Channel flow? I look forward to your reply.

Yours faithfully

Don Paterson

MARINE RECREATION & FISHERS ASSOCIATION

BOP/WAIKATO

"IF WE LOOK AFTER TANGAROA, THEN TANGAROA WILL LOOK AFTER US"

P O Box 5039
Mt Maunganui

President: Steve Penn

Vice President: Lynton Tong
Secretary/Treasurer: Sharon Baxter

11th September, 1998

Kim Young
Technical Support Officer
Fresh Water
Department of Conservation
P O Box 1146
ROTORUA

Dear Kim;

I am writing to you on behalf of the Committee of the Marine Recreation and Fishers' Association BOP/Waikato, which is the Regional Recreational Fishers' Association and a branch of the Recreational Fishing Council. We are a voice for the Bay of Plenty/Waikato sustenance fishers.

I was recently pleased to read of your involvement, with inanga spawning habitat creation on the Whakatane River, in a published article entitled 'Joint Project Helps Whitebait to Breed' and which described co-operation between Environment BOP and DOC.

My committee would like to see work extended to other Bay of Plenty/Waikato

waterways. We see saline whitebait populations as an essential part of coastal fisheries food chains. We see inanga, kokopu and koaro and tuna freshwater habitat creation as very important in coastal fisheries production.

There are areas within the Bay of Plenty and Waikato regions where we believe that significant gains in whitebait production could be achieved through habitat creation and at very little expense.

Work to enhance inanga spawning habitat on the Whakatane River could now be extended to all stop-banked waterways within spring tidal reach as regular maintenance works occurred.

Farm drains could be widened permanently. Pumping stations could allow the passage of spawning fish and returning whitebait.

Riverbank stop banks could be widened at spring tide level and fenced off from livestock, to create spring tide spawning habitat that is protected from grazing.

All farmers could be offered rating reductions and/or other incentives if lowlands and gullies were reflooded with a succession of wetlands and ponds, to create adult inanga, kokopu and koaro and tuna habitat that is connected to the sea.

Regional Council could subsidize habitat creation/restoration and fencing as it has already done for erosion control.

Low producing wet farmland areas could be reflooded permanently and planted with raupo to create ideal and highly productive galaxius habitat.

Fish ladders could be built up hydro dams to enormous potential benefit if spawning habitat was also created within spring tidal reach.

Interested parties might include benefactors like Fish & Game Councils, Federated Farmers who could possibly see some land values rise, and not least the commercial fishing industry who would stand to gain significantly from an increase in pelagic fish numbers.

Schools and Polytechnics could gain educational opportunities to study and promote awareness of the importance of the native fresh water fish species to pelagic coastal fisheries production.

One example of significant habitat creation potential that has been long studied at considerable public expense, but so far without obvious improvement, is Maketu Estuary. Maketu Estuary spring tide spawning habitat could be improved and reconnected with the Kaituna River galaxius population by an inexpensive overtopping structure that would create a surface layer fresh water spring tide movement, and so lead spawning galaxius into the estuary habitat.

There would also be the joint benefits of sand spit stabilization from a Papahikahawai Channel flow, and flushing of sand from the lower Maketu Estuary in times of flood. There is a small section of private land that may need to be purchased or leased from the owner.

Adult inanga, tuna and kokopu habitat could also easily be created on lowland adjacent to Maketu Estuary, that is owned by Te Aroha Maori Trust, some of which was I believe illegally drained by the current leasee.

There are seemingly endless examples in this region alone where native fresh water fish species habitat can be improved to the benefit of this countries economy as a whole.

I enclose with this letter some information on galaxius for your interest.

Yours faithfully

Don Paterson
Bay of Plenty Game Fishing Charters
26 Jellicoe Street
TE PUKE
Mobile #(025)517-947
Fax #(07)573-9363

MARINE RECREATION & FISHERS ASSOCIATION
BOP/WAIKATO

"IF WE LOOK AFTER TANGAROA, THEN TANGAROA WILL LOOK AFTER US"

P O Box 503
President: Steve Penn
Mt Maunganui

Vice President: Lynton Tong

Secretary/Treasurer Sharon Baxter

11th September, 1998

Roger Waugh
Asset Management Engineer
Environment BOP
P O Box 364
WHAKATANE

Dear Roger;

I am writing to you on behalf of the Committee of the Marine Recreation and Fishers' Association BOP/Waikato, which is the Regional Recreational Fishers' Association and a branch of the Recreational Fishing Council. We are a voice for the Bay of Plenty/Waikato sustenance fishers.

I was recently pleased to read of your involvement with inanga spawning

habitat creation on the Whakatane River in a published article entitled 'Joint Project Helps Whitebait to Breed' and which described co-operation between Environment BOP and DOC.

My committee would like to see work extended to other Bay of Plenty/Waikato waterways. We see saline whitebait populations as an essential part of coastal fisheries food chains. We see inanga, kokopu tuna and koaro freshwater habitat creation as very important in coastal fisheries production.

There are areas within the Bay of Plenty and Waikato regions where we believe that significant gains in whitebait production could be achieved through habitat creation and at very little expense.

Work to enhance inanga spawning habitat on the Whakatane River could now be extended to all stop-banked waterways within spring tidal reach as regular maintenance works occurred.

Farm drains could be widened permanently. Pumping stations could allow the passage of spawning fish and returning whitebait.

Riverbank stop banks could be widened at spring tide level and fenced off from livestock to create spring tide spawning habitat that is protected from grazing.

All farmers could be offered rating reductions and/or other incentives if lowlands and gullies were reflooded with a succession of wetlands and ponds to create adult inanga, kokopu, tuna and koaro habitat that is connected to the sea.

MARINE RECREATION & FISHERS ASSOCIATION

BOP/WAIKATO

"IF WE LOOK AFTER TANGAROA, THEN TANGAROA WILL LOOK AFTER US"

P O Box 503
President: Steve Penn
Mt Maunganui

Vice President: Lynton Tong

Secretary/Treasurer Sharon Baxter

1 December, 1996

Mr Bill Kirk
Strategic Planning Group
Recreational Fishing Council
C/- Box 26064
Newlands
WELLINGTON

Dear Sir;

The New Zealand coastal fishery has not been allowed to produce to its full potential. Major food chains have been suppressed into comparative non-existence. Maximum production has not been allowed to occur.

The potential for production within the territorial sea is enormous and easily achievable. Inanga could be allowed to become prolific again. Protection of whitebait of which 80% are reportedly inanga would be followed by an increase in sprats, pilchards and herrings and then in turn by commercial species.

Swamplands bordering the coastline have been drained and they could now be reflooded to create inanga habitat. Inanga habitat could be connected with estuarine Inanga spawning habitat which has also been drained and which could be recreated.

There remains contention over whether or not fish stocks could be protected while spawning as a management tool to increase production. This could be resolved by protecting striped marlin while they are spawning off Cairns during December. A post spawning increase in striped marlin numbers in our waters in subsequent years could prove protection while spawning to be an effective management tool.

We hereby make the recommendation that the Crown be encouraged to recreate adult inanga habitat on all available land within 5 miles of the coast, connected with inanga spawning habitat.

We also make the suggestion that the Recreational Fishing Council recommend to the New Zealand Big Game Fishing Council, that it contact the International Game Fishing Association with regard to protection of striped marlin while they are spawning in Australian territorial waters during the month of December.

Yours faithfully

Don Paterson

23rd April, 1996

Todd Sylvester
M. Fish
Box 3437
AUCKLAND

Dear Todd

As a follow-up to my recent comment to you about whitebait please find enclosed some proof of what I was saying.

Further to the analogy that we both used at the time; even if the fences are up production on the farm still remains minimal until the farmer provides more

feed for the animals.

Therefore it follows that if we re-create coastal habitat then we will put the whitebait back. In doing so we will put the sprats, pilchards and herrings back, which will in turn feed the commercial pelagic species and then we can have maximum productivity from our coastal fishery.

Yours faithfully

Don Paterson

MARINE RECREATION & FISHERS ASSOCIATION
BOP/WAIKATO

"IF WE LOOK AFTER TANGAROA, THEN TANGAROA WILL LOOK AFTER US"

P O Box 503
President: Steve Penn
Mt Maunganui

Vice President: Lynton Tong

Secretary/Treasurer Sharon Baxter

MOTION- passed
That MRFA forward the following letter to all members of Parliament and present it to the Recreational Fishing Council AGM.

Dear ……

The oceans that surround our coastline must be farmed as opposed to harvested and harvesting techniques must be compatible with the maintenance of a population biomass. Maximum coastal fisheries production will result from time proven farming practices.

All species of fish must be protected while spawning. Set nets, gill nets, tuna longliners, purse seiners, trawlers and Danish seiners, must be kept outside the 12 mile limit and away from all islands.

Coastal food chains must be rebuilt with a whitebait population that used to exist. Freshwater adult inanga habitat and estuarine spring tide spawning habitat must be recreated.

If the oceans were restocked with juvenile whitebait, then they in turn would be followed by sprats, pilchards, herrings, scad and the juveniles of the commercial species.

If we stopped killing those juveniles and stopped destroying their habitat, this country could achieve maximum coastal fisheries production. Intelligent

harvesting techniques could utilise manpower while catching fish individually in perfect exportable condition.

Marine reserves must be established around our coastline to restock areas that are harvested.

Pollution of our coastline in every form must be severely outlawed.

Fish could exist in abundance for both commercial and recreational fishers if they were allowed to do so.

The New Zealand 200 mile economic zone has the potential to be the greatest and most productive farm in the world; its produce of incredible monetary value to this countries economy.

The 12 mile territorial sea could become known as the Fisheries Heritage Protection Zone. Every New Zealand citizen could have a chance to enjoy the best and most productive salt water fishery in the world.

The Fisheries Heritage Protection Zone could be available to tourists from throughout the world at considerably more economic value to this country, than we are currently able to gain from the over harvesting of depleted fish stocks.

Yours faithfully

D.C. Paterson
MRFA COMMITTEE

6th October, 1993

The Planning Tribunal
Private Bag
Postal Centre
WELLINGTON

Dear Sirs;

I delivered my intended submission to your Tribunal in the form of the enclosed material to a meeting at the Whakue Marae, Maketu, on the night of Tuesday, 28th September 1993. The meeting comprised in the main the Whakue Marae Committee. The material that I submitted found favour with the majority of people at the meeting. It was fully supported by Te Aroha Maori men at the meeting who included Mr Clem Tapsell, Phone (07)533-2327, Mr Cyril Newdick and Mr Robbie Clark. These men grew up with, know and have used Maketu Estuary and the lower Kaituna River like no others remaining alive today. They asked that their names be mentioned in this letter to your Tribunal in support of my submissions.

While others supported my ideas, they also questioned how long it might take

to implement them with respect to their feeling that they had already been waiting for 20 years for the Kaituna River to be returned to Maketu Estuary. A degree of urgency to see some form of trial re-introduction of Kaituna River water to Maketu Estuary did overshadow other consideration.

The meeting agreed to initiate Te Arawa Maori support for my efforts to date to re-establish the presence of coastal whitebait populations. This would begin with re-establishment of 90 acres of former maritime marshland galaxius spawning habitat adjacent to Maketu Estuary and currently owned by the Brain family. This could then set an example of the potential rebuilding of this country's coastal pelagic fishery if more habitat was recreated for these fish at the bottom of coastal pelagic food chains.

I fear that without flushing flood flows being allowed through Maketu Estuary via the 90 acres and both sides of Papahikahawai Island, Maketu Estuary restoration will never be complete and will represent mistaken and comparatively ineffectual use of public funds. I remain convinced that I have proposed a far superior site economically and ecologically and hydraulically than Twin Cuts for trial re-introduction and then eventual significant re-introduction of Kaituna River water to Maketu Estuary. I foresee the possibility of future flood flows being employed at no cost to flush sand from the lower estuary, enlarge the spit and so naturally return Maketu Estuary to its original state. I do not believe that diversion through Twin Cuts can achieve this and I believe that the Twin Cuts option will incur ongoing costs.

Your Tribunal is to consider the contents of my submission on its merits with a view to achieving ideal Maketu Estuary restoration. You have stated your intention to hear my appeal prior to Christmas of this year. I have asked Dr. Terry Healy of Waikato University for his expert comments on my opinions.

I was asked by the Whakue Marae meeting to withdraw my objection to the granting of Water Right No. 2636 on the grounds that they feared it might delay any form of restoration works from occurring. I feel that a possible 3 month delay in proceedings that I might cause is far outweighed by the advantages of the alternative diversion which I have described in my enclosed letter to Mr Alan Willoughby. It is with heartfelt disappointment that I am not able to comply with their wishes.

Should the Planning Tribunal in its wisdom decide that the most beneficial and cost effective option of rediversion of Kaituna River flow through Maketu Estuary is in fact the option that I have designed, I hereby wish to make it known that I would like to perform all rediversion and restoration workings in consultation with professional advice.

Yours faithfully
Don Paterson

19th August, 1993

Mr Alan Willoughby
Land Resource Management Co-coordinator
Bay of Plenty Polytechnic
Private Bag 12001
TAURANGA

Dear Alan;

Thank you for your letter dated 21st July, 1993. I wish to make the following comments in reply.

It has been recorded in recent history that upon breaking out at Te Tumu the Kaituna River mouth migrated eastwards towards Maketu forming the sand spit behind it. The Kaituna River must at some stage therefore have flowed through the Papahikahawai Channel or that channel between Papahikahawai Island and the sand spit would not be there. The comparative age of sections of the sand spit can, I believe, be determined by its present height with a steady decrease in height in the direction of Maketu.

The old river course from Te Tumu and adjacent to Brain's land is clearly visible and so Brain's land must have been flooded as maritime marshland as a consequence of its low level. I can recall as a boy some 25 years ago witnessing the area isolated from the rest of the estuary and feeling then a twinge of disappointment at the loss to mother nature. There was in fact water on part of that area then. The late Oliver Brain told me that the area is below sea level, hence the need to pump water from it. I speculate that if this is the case then upon re-introduction of some Kaituna River flow to the area, ponding would occur and so prevent formation of unstable river channels.

It may appear to some that the Kaituna River has never flowed through the channel between Papahikahawai Island and the sand spit, across the area of Brain's land which has the dams to prevent flooding, but we don't really know what has happened to that area except in recent history. It is of little consequence however as we are now dealing with a stable scenario with Te Tumu cut permanently in place, controlling the Kaituna River exit to the sea and able to accommodate flood flows. Times of high river flow through Maketu Estuary need not ever occur if deemed to always be undesirable, because of an intended monitored re-introduction.

Following partial re-introduction of Kaituna River flow to the 90 acre area currently owned by the Brain family, water flowing through Papahikahawai Channel would be flowing towards lower Maketu Estuary levels and so should speed in a straight line. Rocks on the spit could soon put a stop to erosion at this point it if did occur as a result of river flow. I do not however believe this to be a likely occurrence. High wave energy is also irrelevant to Maketu Estuary sand spit at this point because of sand spit age and so sand spit height.

Prior to the initial attempted and unsuccessful diversion of the Kaituna River through Twin Cuts, which I believe you refer to as the planned river channel, and prior to breaking out at Te Tumu, I speculate that the Kaituna River used

to flow behind Papahikahawai Island and through Papahikahawai Channel.

I believe that this latter flow protected Maketu Estuary sand spit from a bending and erosive flow from the back of the estuary, as it came around behind the significant area of maritime marshland and tea tree that used to comprise Papahikahawai Island. Eye witness accounts still speak of this and of the high and stable sand dunes adjacent to the present site of the Maketu Surf Club.

I believe that diversion of the Kaituna River through Twin Cuts and current flow from the back of the estuary as a consequence, in isolation from a simultaneous flow through Papahikahawai Channel, did cause a remodelling of estuary channels and resultant destabilization of the eastern end of Maketu Estuary spit. I believe that current which had once flowed around and parallel to the spit from Papahikahawai Channel, had previously protected the spit from erosion.

The estuary channel carrying water from the back of the estuary and the connecting channel with Twin Cuts is continuing to threaten spit stability, by bending and eroding the back of the spit as it turns to face Maketu. It is my opinion that this same channel bending again and eroding again, did cause destruction of the eastern end of the spit and sedimentation of the lower estuary, due to eventual wave overtopping of the comparatively recently formed lower and then later narrowed segment of the spit. Had eastern Maketu Estuary current flow on a falling tide also been from the direction of Papahikahawai Channel and parallel to the spit, it would have protected the spit from erosion from behind.

I have witnessed the continuous destruction of the toe of Maketu Estuary spit followed by the partial reformation and subsequent destruction, from above and directly opposite the toe of the spit, as it has occurred during the past 6 years while residing at Arawa Avenue, Maketu. The sand spit is eroded from behind on a falling tide and then the already low lying and recently formed spit is overtopped on a high tide. The wave action that originally formed the sand spit then destroys it, washing sand into the lower estuary. The estuary channel coming from the direction of Twin Cuts and the back of the estuary moves the recently deposited sediment on a falling tide, but because of the reduced tidal prism without the presence of Kaituna River flow and because of its trajectory, it is unable to move it far and deposits it nearer to the estuary mouth. The incoming tide then forms a more significant flood tide delta which eventually forms a new higher sediment level in the lower estuary.

Meanwhile the sand spit reforms with wind and wave washed beach sand and the mouth migrates back towards the surf club. The estuary channel from the centre of the estuary and the direction of Twin Cuts then dominates on a falling tide and erodes the back of the sand spit again. Yet more sand is deposited in the lower estuary and the cycle is repeated.

In addition to this reoccurring scenario more sand is washed into the estuary on a rising tide because of wave action destabilizing beach sand and less

sand is washed out of the estuary on a falling tide, because current flow must slow and turn at a right angle and so it drops and deposits sand. On top of this, some well meaning individual has regularly dug a channel to the boat ramp which invites sand to move in to fill it, because of its position in relation to rising tidal flow. Add this to the fact that the digger has until my most recent contact with Mr Jeff Jones, deposited that excavated sand within reach of estuary tidal flow and you can see another reason why the lower estuary has filled with sand.

An increase in the tidal prism would cause a subsequent increase in water currents. However manipulation of Kaituna River flow through a one way flap gate structure into the western end of Maketu Estuary, would I believe, prevent some clean sand washing in through the estuary mouth from the beach and infilling the lower estuary. A monitored reintroduction should not have a detrimental effect on swimming safety standards in my opinion.

Partial reintroduction of Kaituna River flow through Maketu Estuary will improve flow ratios in the lower estuary, wherever that re-introduction is introduced from. I do not however believe that it will have significant flushing effect on the lower estuary, unless it is of some significance and at least in part via Papahikahawai Channel.

Reintroduction of Kaituna River flow to Maketu Estuary from Twin Cuts and the back of the estuary on its own, would I expect cause the eastern end of Maketu Estuary spit to remain unstable. Occasional significant flushing flows through Papahikahawai Channel on a falling tide, would I believe reform original lower estuary channels and so spit toe stability, while again deepening the lower estuary. This would create potential boat moorings and improved access to the boat ramp without capital expense, by washing estuary sand back out to sea through the estuary mouth. I believe that expensive ongoing maintenance in the form of dredging in the lower estuary and spit stabilization to the eastern end of Maketu Estuary spit will inevitably follow the Twin Cuts diversion option unless Papahikahawai Channel flow is re-introduced.

I believe that the Kaituna River broke out to sea in the past at Te Tumu because it turned there behind the sand spit and headed towards its Maketu entrance. It was on the outside of this bend that it eroded the beach sand dune and perhaps with the help of wave action, it broke out to sea. I believe that this occurred as a result of catchment clearing and land drainage, which caused a new scenario in the lower river.

It meant that rain water moved more quickly to the lower river and so there was more pressure on the estuary and on the sand dune at Te Tumu to accommodate extra flows. In my opinion, reintroduction of Kaituna River flow to Maketu Estuary through Twin Cuts in isolation from a Papahikahawai Channel flow would create a similar scenario. It would result in more erosive force being applied to the back of the eastern end of Maketu Estuary spit, with the inevitable consequence of spit erosion.

The infilling of the eastern end of Maketu Estuary with wave washed beach sand, heightened by manipulation of flow ratios by the removal of Kaituna River flow from Papahikahawai Channel and from the estuary, has caused smothering of the extensive shellfish beds that Maketu was once well known for. The distribution of sand bars has been changing and burying existing shellfish beds in Maketu estuary since the stabilizing Papahikahawai Channel flow was stopped. The once extensive pipi beds adjacent to the Marae are no longer in existence. Estuary islets have completely disappeared since engineers first interfered with natural estuary energy flows by diversion through Twin Cuts, in isolation from a Papahikahawai Channel flow. Eye witness accounts recall small established islets that were supporting herbage, washed away as estuary channels altered. I believe that the eastern end of the estuary sand spit was also eroded from behind as a result and that sand was redistributed by tidal flow to infill the lower estuary.

You have recognised that one of the main arguments for rediverting the Kaituna River into Maketu Estuary is restoration of the mana of the local Iwi. Mana has been lost to the local Iwi by the loss of shellfish beds, and be degradation of their natural environment. People have not become accustomed to using the estuary in its present form by choice. Since the original diversion the mana of the local Iwi has suffered from the disappearance of the Kaimoana, which Maketu was once well known for. They have also suffered from the infilling and shallowing of estuary waterways. Since the Kaituna River has been restricted to its present Te Tumu entrance Maketu has suffered from the loss of mauri, or the spirit of the river. People are no longer able to use the estuary in the manner which they desire, because original diversion through twin Cuts, did I believe, set in motion destruction of the stability of the toe of Maketu Estuary spit.

The original diversion through Twin Cuts caused erosion from behind and destabilization of the eastern end of Maketu estuary spit, from subsequent wave overtopping. I believe that mana could best be restored to the local Iwi and to Te Arawa people as a whole by returning the estuary to as close to original as possible.

This will include stabilization of the toe of the spit with a Papahikahawai Channel flow; deepening lower estuary channels with an increase in the tidal prism; stabilizing those channels with a Papahikahawai Channel flow; re-establishing the presence of fish life at the mouth of Maketu Estuary by recreating food chains, by again making Maketu Estuary maritime marshlands available to spawning Kaituna River galaxius; the parents of whitebait, and the bottom of coastal pelagic fisheries food chains.

The option of rediversion of Kaituna River flow through Maketu Estuary of least resistance through Twin Cuts is also the option of least advantage to the estuary. We must not lose site of the fact that Maketu Estuary and the sand spit were created by the Kaituna River flushing sediment and dumping it in the ocean, to be marched back towards the shoreline by wave action. It follows then that we can now let part of the increased Kaituna River flow perform the identical task for us.

I believe that it is vitally important to restore Brain's 90 acres to stable wetland habitat, receiving Kaituna River high and spring tide flows. It would become maritime marshland on the outside of a river bend, where salt and fresh water would flow over an overtopping structure and so best suit spawning galaxius requirements. It would be as close as possible to simulating a natural spring tide phenomenon. An area growing maritime marsh and filled with a mixture of fresh and salt water is where galaxius prefer to spawn. Evidence of galaxius spawning further upstream these days is irrelevant, and simply the result of isolation of estuary maritime marshlands and the creation of a new salt water wedge through the Te Tumu entrance which could be contained by a weir where I have proposed reintroduction could occur from.

I believe that the Maketu Estuary environment would change significantly if the Kaituna River was reintroduced in the way that I have proposed. It would come alive again as larger fish would return in pursuit of the galaxius spawn and returning whitebait. I sincerely hope that others might also in time recognise the potential benefit of recreating further maritime marshlands around estuary boundaries, as well as creating significant inanga habitat on low lying areas within a few kilometres of those estuary spawning grounds. Alas, residents have now become accustomed to Maketu estuary being comparatively fishless as it currently exists.

Maketu Estuary is at present relatively stable ecologically and sedimentologically, with the obvious exception of the eastern end of the estuary. That is to say that it is comparatively devoid of life to what it could be and it is steadily infilling with sediment, as the toe of the spit is continually eroded by an estuary channel initiating at the back of the estuary. I do not believe Maketu Estuary restoration to be a very complicated problem at all. If it is done as I have proposed, I believe that Maketu residents will immediately see advantage.

Alternatively the proposed reintroduction through Twin Cuts would not have significant effect, as flushing flows would never be available to Maketu Estuary and will continue to escape at Te Tumu. Erosion at the back of the toe of Maketu Estuary spit could be expected to continue to occur and so require unnatural re-enforcement. Flow ratios would change and reduce the intrusion of sand to the lower estuary through the estuary mouth, because the estuary would be filling from two sites. However sand would have to be dredged from the lower estuary at additional capital expense if Kaituna River flow was not allowed to perform the task on a falling tide at no cost, via Papahikahawai Channel.

Maketu residents have voted for the return of the Kaituna River to Maketu Estuary for many years. Undoubtedly sediment which is carried by the Kaituna River is more polluted than that already in the estuary. That is why I wish to see it settle on Brain's 90 acres, where it would assist with the establishment of maritime marshlands. Potential pollution of Maketu Estuary shellfish by Kaituna River water would be further reduced from this site of reintroduction, because of the salt water content of the reintroduced river flow.

I fail to see how reintroduction over a lowered section of the stop bank some considerable distance from the beach, on the outside of a river bend where there is proportionately less sediment and proportionately less of the salt water wedge, could possibly allow sediment to be easily washed onto Brain's 90 acres from the sea.

Sand marches towards the coast as a result of wave action to form sand spits and beaches and sand dunes, or in this instance supposedly in through the Te Tumu entrance of the Kaituna River against surface river flow. The sand would be below the level of an overtopping structure that was allowing only the top layer of water comprising in part fresh and in part salt water, to overtop it. At times of low river flow and high wave energy the scenario would not change, and the overtopping structure would remain in place some distance up river from the beach.

Use of the present Kaituna River entrance at Te Tumu by boat and barge would not be affected by overtopping high and spring tide river water into Maketu Estuary, via the 90 acres. Te Tumu entrance would continue to be maintained as it exists now by Kaituna River falling tide and flood flows that could not overtop the reintroduction structure except at high tide.

I envisage that partial flow of Kaituna River water through Maketu Estuary need not be variable at all. Controlled reintroduction onto Brain's 90 acres could occur at high tide and at times of extreme Kaituna River flood flow. It could then enter the existing estuary through Papahikahawai Channel initially and then later also under the 1971 subsidised rock protection once lower estuary channels had corrected themselves. Upon filling from three sites the estuary would then empty at Maketu. As the estuary emptied, water on Brain's 90 acres would flow through the Papahikahawai Channel and parallel to the sand spit at this point. Then, bending around the spit as it curves in the direction of Maketu Surf Club, that flow would protect the spit from erosion from current flow initiating at the back of the estuary. This additional flow from Papahikahawai Channel would with its trajectory, increase scour potential in the lower estuary and so move sediment back out to sea. The greater the volume of flow allowed through Papahikahawai Channel the more significant would be its scouring effect on the lower estuary and the estuary mouth.

Catchment clearing and wetlands that used to exist on the plains are irrelevant to present Maketu Estuary channel sedimentation and to the reintroduction of some Kaituna River flow to Maketu Estuary, because the Te Tumu mouth of the Kaituna River will remain in place and able to capacitate irregularities in Kaituna River flow rates, in isolation from Maketu Estuary.

I do not wish to upset my friends the Brain family in any way whatsoever by speaking of the Government purchasing their land, especially after the dissatisfaction expressed to me by the late Mr Oliver Brain, about the way he had been treated through confiscation of his land to build Twin Cuts: Through his fight to get fencing completed as promised along Te Tumu Cut stop bank and through failure by the authority concerned to build a walkway as promised

for his cows across Twin Cuts, adjacent to the road.

I promised Oliver that I would continue to fight to prevent Twin Cuts being used for rediversion of the Kaituna River through Maketu Estuary, as we could both see the folly of doing so. I convinced him of the importance of whitebait to the coastal fishery, of the potential of the coastal fishery to profit this country if farmed intelligently, and of the value in monetary terms of his 90 acres to this country as galaxius spawning grounds. I believe that it was on the strength of this reasoning that he withdrew his objection to the Planning Tribunal before he died.

Yours faithfully

Don Paterson

7th February, 1992

Mr Brent Wheeler
Chairperson Fisheries Task Force
C/- The Secretariat
MAF Policy (Fisheries)
P O Box 2526
WELLINGTON

Dear Sir;

Thank you for your letter of 10th January, 1992. I do believe that the Fisheries Task Force legislation review could develop a statutory framework which could lead to better management of New Zealand's varied fisheries resources. I am sure you are aware that the submission that you have previously received from me does contain five years of attempts to initiate better management of New Zealand's varied fisheries resources and does touch only briefly on Maketu Estuary.

I believe that Maketu Estuary restoration could, if done correctly, set an example which could eventually lead to the re-establishment of food chains on a national level and so is far more than a particular local issue.

I have recently attended a meeting of concerned recreational fishermen in Tauranga. I do not believe that these individuals can in fairness be expected to compete for professional services while using private funding. Large commercial companies on the other hand gain their funding by exploiting public fish stocks.

I have included some additional copy material for your information in the hope that you might help me to gain some support but my submission to your task force remains unchanged. The oceans that surround our coastline must be farmed as opposed to just harvested. Harvesting techniques must be

compatible with the maintenance of a population biomass. That immediately rules out the use of set nets and gill nets, of tuna longliners and purse seiners within the 12 mile limit.

Trawlers and Danish seiners should not be allowed to operate within a more extended radius of land if at all because of the damage they so efficiently inflict.

All species of fish should be protected from all types of fishermen while they are spawning and need only be protected from recreational fishermen while spawning.

Purse seiners should only harvest species of fish which migrate into New Zealand territorial waters and their annual catch rates should be monitored to assess the sustainability of a fishery.

Striped marlin could be protected from all but tag and release fishermen and with some co-operation could be protected while spawning off Cairns, Australia in December. This would ensure a rapid population increase followed by a decline in decapterous koheru numbers and a subsequent increase in saline juvenile whitebait numbers.

A rebuilding of coastal food chains with a whitebait population would quickly result from an increase in fresh water inanga, kokopu and koaro habitat and the re-establishment of their estuarine spring tide spawning habitats.

Fish ladders could be built up hydro-dams to connect significant fresh water koaro habitats like Lake Taupo with potential coastal fisheries production.

The seaweeds that used to provide habitat for juveniles of species that have in places been destroyed by inconsiderate trawler men, could be protected and allowed to regrow.

Marine reserves could ensure that a quarter or a fifth of the coastal habitat remains undepleted and able to restock areas that are harvested commercially. The coastline could also be seeded with juveniles of commercially important species of fish like snapper for example as does occur in Japan.

Pollution of the coastline which inevitably results in destruction of sea life and of habitat could and should be severely outlawed.

Maximum coastal fisheries production will only result from intelligent farming practices and not from squabbling over crumbs. You cannot achieve farm production without growing grass and the same holds true for oceanic production. If the oceans were re-stocked with juvenile whitebait they in turn would be followed by sprats, pilchards, herrings, scad, etc. and the juveniles of commercial species. If we stop killing those juveniles and stop destroying their habitat this country will achieve maximum coastal fisheries production.

Using intelligent harvesting techniques would utilise manpower while catching fish with hooks in perfect exportable condition. Fish could exist in abundance for both commercial and for recreational fishermen if they were only allowed to do so. The New Zealand 200 mile economic zone has the potential to be the greatest and most productive farm in the world and its produce of incredible value to each and every New Zealander.

Yours faithfully
Don Paterson

27th November, 1991

Mr Gavin Williamson
S.C.O. (Freshwater)
Department of Conservation
P O Box 1146
ROTORUA

Dear Sir;

Thank you for your letter of 14 November, 1991. I would like to compliment C.P. Mitchell on the standard of the Whitebait Spawning Ground Management: Interim Report.

I believe that a point made on page 14 under Subtitle 3.5 Whitebait Eggs, is of major significance. It is now a proven fact that if ideal habitat was re-created it would then be utilized by spawning galaxius. It follows that the recreation of Maketu Estuary galaxius spawning habitat in connection to the Kaituna River and its tributaries, must see that habitat once again being utilised.

On a national scale it means that the New Zealand coastal fishery is able to be rebuilt from the bottom up with a saline whitebait population that can be recreated. I suggest that the predatory slugs mentioned on page 18 of the report, may be less of a problem within Maketu Estuary boundaries than they are on pasture lands further up the river because of the presence of salt water within the estuary.

Section 4 Discussion, Subtitle 4.1 Site Fidelity on page 17, makes the strong point that river banks should be preserved. It misses the point however, that small lengths of the Kaituna River bank are now being used as spawning grounds because in this instance, Maketu Estuary with its extensive and ideal spawning habitat is no longer available to the Kaituna River galaxius population that once used it. The Interim Report is looking at an empty bottle when it is looking at today's situation. Making Maketu Estuary and its surrounding lowlands available to Kaituna River galaxius isn't going to stop them spawning on the grounds studied for the completion of the report, but it is going to make those grounds seem infinitesimal in significance in comparison to the original ideal habitat that would again be made available.

Subtitle 4.2 Enhancement of Spawning Grounds to Improve Egg Survival, on page 17, suggests that some awareness of the importance of whitebait populations is already becoming apparent. I believe however that there is still a very long way to go. Modifying river banks to recreate spawning grounds where the old grounds have been lost can be seen as ironical in this instance. Our knowledge of the location of whitebait spawning grounds verifies that whitebait used to prefer to spawn in estuaries and amongst rushes, where salt water and fresh water habitats intermingled on spring tides. That is where they chose to spawn before man interfered with their population and their environment.

The spawning grounds of significance that have been lost to Kaituna River galaxius were within Maketu Estuary boundaries, and included the surrounding lowlands that are currently owned by Te Aroha Maori Trust Board, Mr Red Barker, Mr Dennis Armstrong, the late Mr Oliver Brain and Mr Alan Brain amongst others.

It should be recognised that significant inanga habitat has been lost through land drainage and the clearing of native flora in the surrounding catchment. Regardless of what other corrective measures might occur, the Kaituna River whitebait fishery and resultant coastal fisheries production in the vicinity of the Kaituna River outlet at Te Tumu, will never be as productive as it once was until fresh water habitat is recreated for the adults of the fresh water fish species whose offspring migrate to and spend their juvenile lives in salt water.

The fact that the Rotorua lakes habitat is still available to koaro and kokopu means that the Kaituna River galaxius fishery does in part have enormous potential anyway, were they again able to spawn somewhere. But imagine what could be created with a view to setting an example of the possible rebuilding of the coastal fishery, if the original Kaituna River catchment inanga habitat was recreated in connection with the spawning grounds of Maketu Estuary.

The late Mr Oliver Brain suggested to officialdom many years ago in a letter which I have seen, that the Kaituna River should have a governed mouth width to stop salt water wedge intrusion up the river and into farm drains and water intakes. He believed that a sand bar would be eroded by river flow in times of flood and at low tide. Imaging if you will that this did occur and a newly created freshwater level in the lower Kaituna River was allowed to spread over lowlands in isolation from the pumping stations which are at present denying inanga of habitat. The Kaituna River could flow over an overtopping structure at high tide and through Maketu Estuary as did occur naturally, as well as out through Te Tumu Cut at low tide. The re-siting of stop banks surrounding Maketu Estuary would mean that inanga, kokopu and koaro would again be able to spawn as and where they once did. Individual farmers may or may not like to see their land reflooded, but I believe that if the public of this country could see the enormous potential financial gain that would become available from increased coastal fisheries exports and from increased tourism and so the creation of domestic employment opportunity, in comparison to the loss of a little conventional farm production, then it must

happen.

Subtitle 4.3 Vegetation Management and Survival of Whitebait Eggs on page 17, presents the assumption that temperature variation is the primary control for hatching inanga eggs. I mention in passing only that there is more fresh rain water falling on and surrounding inanga eggs in April and May. Perhaps salinity and/or organic content and/or oxygen in the surrounding water, also has an effect on the hatching of inanga eggs?

Subtitle 4.5 Survival Rates to Sustain a Viable Whitebait Population on page 19, poses the question: What is a viable whitebait population? Is it a population that is sufficient to provide a comparatively few people with an opportunity to dip their net? Is it a population sufficient to support a commercial whitebait harvest? Or is it a whitebait population to match that which used to exist and which used to support a coastal fishery that used to exist? The fact that Subtitle 4.5 is based upon estimates does detract somewhat from the otherwise scientific excellence of the report and so should perhaps have been left out for that reason.

Thank you for providing me with the opportunity to express my opinions.

Yours faithfully

Don Paterson

Mr David H. Graham, a Marine Fisheries Investigation and Biological Station Biologist began a life long study of New Zealand fishes in 1897 which he later recorded in a book entitled ‘The Treasury of New Zealand Fishes’.

These writings show that there was a correlation in timing between the decline in whitebait numbers and a similar decline in populations of herrings, horse mackerel, pilchard and sprat. It is worthy of note that by 1930 and in a similar time frame, there was also a noticeable decline in kahawai numbers even though the species had not before then been over fished.

I suggest therefore that in addition to my previous submissions, the key to the productivity of this country’s coastal pelagic fishery is an abundant saline whitebait population. Further supportive of this opinion is the fact that the grayling, a fine edible and sporting fish which was abundant in Bay of Plenty rivers prior to 1900, did in fact disappear before trout were liberated and I surmise as inanga numbers declined.

The inanga is the parent of our whitebait and does live in any fresh water that has an outlet to the sea. Unless steps are taken to preserve its breeding grounds it will, or has, become like many more of our fish, a thing of the past.

Graham quotes sprats as being taken from the stomachs of 17 species of fish which had been feeding on them at varying depths down to 50 fathoms. Sprats were to be found up and down the coast in vast shoals.

“Pilchards were found in the stomachs of commercial fish caught down to 80 fathoms. They were also found in the stomachs of some bottom dwelling fish including flat fish. At times large shoals were so abundant one felt it might be possible to walk on them. They were observed in hundreds and perhaps thousands of tons, a sight which could only be described in superlatives. Shoals were seen a mile or more wide and almost continuous in length. So plentiful were they that the water with the sun shining brightly had the appearance as if heavy rain was falling. This was due to these small glistening fish jumping out of the water to escape the fish which were pursuing and devouring them.

There was no more interesting sight than to be in a launch speeding ahead and to see shoals of pilchards, as far as the eye could see, swimming closely packed side by side, tier above tier, moving rapidly ahead darting hither and yon as they leapt and turned chasing food. They prey on minute sea forms and are in their turn the prey of every fish and many birds. These small fish play an important part in the food of larger fishes, including all surface and shoal fishes. Twenty four species of fish were found to have been feeding on pilchards and no doubt many others would qualify as predators.”

Shakespeare was quoted thus: “I marvel how the fishes live in the sea. Why, as man do a-land; the great ones eat up the little ones”.

It seems to follow that if New Zealand recreated more inanga habitat in connection with inanga spawning habitat and if we protected whitebait and inanga from predation by man, we would build sprat and pilchard and other small and juvenile fish numbers which would in turn create much higher production from our very exportable pelagic fishery.

Yours faithfully

Don Paterson

I QUOTE FROM A TREASURY OF NEW ZEALAND FISHES
By David H. Graham

Chapter 21 Minnow or Whitebait (inanga)

Probably no other species of fish is as much discussed as the New Zealand whitebait, our choicest freshwater delicacy, which was so extremely abundant but, though still plentiful, is now becoming scarcer so that before long, unless steps are taken to preserve its breeding grounds, it will become, like many more or our fish and plants, a thing of the past. Future generations will wonder why, for it is truly said that we are responsible for the future of our fauna and flora, but like human beings we follow the line of least resistance and little or nothing is done.

All kinds of questions arise. What is Whitebait? Where does it come from?

Where does it go to? What does it turn into? Do other countries have Whitebait? Why does it deposit its eggs on ground which later is without water?

For a long time it has been known to the Maori and to Europeans that our New Zealand whitebait is the young of a native freshwater fish commonly known as minnow or inanga or hiwi to the Maori, and erroneously called a trout. The inanga, or minnow, is a fish 4 to 6 inches in length, very rarely 7 inches long, and is known to science as *Austrocobitis attenuatus.* The early settlers called it Maori trout, native trout, rock trout and minnow. But it is not a trout. Nor is it a minnow, though it resembles the English freshwater minnow. While the name trout is not correct, it is and will always be known as such by farmers and naturalists. In the Bay of Plenty, whitebait is known to the Maori as porohoe.

The minnow, inanga or native trout, whatever you like to call it, is the parent of our whitebait and lives in the upper reaches of New Zealand rivers, lakes, creeks, drains and any sheet of water having an outlet to the sea. In all my mosquito investigations in the Auckland province, I never found a minnow living in any water that did not have an outlet to the sea. It will live in large areas of very slowly moving water, even in the most stagnant, swampy places that are growing raupo, rushes and toetoe grass, but there is always an outlet to a creek or river.

The old-time Maori knew that the inanga migrated downstream to spawn, and was under the impression that it spawned in the sea. He was not far out in his observations. In 1868, Mr L. Powell watched the growth of whitebait at the Christchurch Acclimatisation Society's trout hatchery. In 1904, Mr D.H. McKenzie published in the *New Zealand Illustrated Magazine* an account of the breeding habits of the minnows seen on the Rangitikei River. In February, 1911, Mr W B Brandon of Hokitika recorded the spawning of minnows.

Previously men who had seen minnows congregating at high tide gave the fish the name cowfish because of the milkiness of the water, due to the amount of milt from the males and ova from the females which they extruded as they were lifted in a net from the river. Mr Brandon writes: "The fish appeared to be whirling over each other as their backs rose continually to the surface. The spawning fish made no attempt to escape when an endeavour was made to capture them". In 1929, Captain Hayes, Marine Department, obtained ripe inangas of both sexes and artificially fertilised the eggs, successfully hatching out healthy fish in salt water, brackish water and in fresh water, a notable achievement and discovery.

It appears that the inangas are ready to spawn in February, March and April, migrating down stream to that part of the river bank where the high spring tide meets the fresh water and covers the surrounding land with a mixture of sea water and fresh water. During the high tide, the eggs are anchored to rushes, weeds, grasses, clover and other vegetation being deposited in clusters on the stems where they will be most protected, and even on the ground about the roots of the stems of the plants mentioned. As time and tide wait for

neither man nor fish, all must be done quickly before the tide recedes. During the time the female minnow is depositing her eggs, the males are busy extruding milt to fertilise the numerous eggs.

Statements have often been made by my Maori and Pakeha friends that the inanga spawns more than once a year. I can only quote Mr S.E. Webb of Opotiki whom I have known intimately for 40 years and I know him to be a keen and accurate observer of Nature. He assures me that he has known of the inanga spawning both in autumn and in the spring. In September of 1944, in the early morning at neap tide, he saw inangas being caught from the Otara River, Opotiki, Bay of Plenty, about 2 ½ miles from the sea. Men had no difficulty in netting a sack of about 200 pound weight of inangas 2 ½ to 3 inches in length. The females were ripe and ready to spawn, so much so that during netting and while being tipped out of the net and into the sack, ova were being freely extruded.

It will be seen that the eggs are left high and dry between the high spring tides. One cannot help but wonder why a fish should spawn where the water covers the ground once a fortnight or less. Once the eggs are fertilised, the young fish begin to develop in spite of the lack of water. One reason put forward is that the eggs are protected from attacks of water inhabitants and predatory enemies. When the next spring tide occurs, perhaps weeks later and the eggs are again submerged, the eggs hatch and the larval minnows are carried away by the ebb tide. That the eggs can withstand a fortnight of dryness is remarkable, but it is still more amazing that, if the tides do not reach the eggs within a fortnight after spawning, they are able to wait till the next spring tide, or even to extend that time to six weeks - a wonderful provision of Nature: as John Dryden said: “For Art may err, but Nature cannot miss”.

Before the arrival of the Pakeha, the eggs were safe, not only from water enemies but reasonably safe from land enemies as well. But today, with the advance of agriculture things have changed for the worse for whitebait, since horses, cattle, not to mention human beings, destroy enormous numbers of developing eggs by tramping down the vegetation on the banks of rivers, where the minnow deposits her eggs.

After the eggs have hatched, the outgoing tide carries away the larval fish seawards, where they attain strength and resistance for their future swim upstream to the home of their parents. The immature whitebait frequently go far out to sea and from those I have found in the sea, it appears they live on diatoms before beginning their ascent upstream. They, in their turn, are preyed upon for I have frequently found them in the stomachs of sea fish. Whitebait have other enemies in the introduced trout and salmon.

An interesting record was the catching of a number of whitebait 3 ¼ inches in length in a garfish bunt in the Otago Harbour in February, 1931. This raises an interesting point as to what these small fish were doing in this locality. Had they lost their sense of direction, missed the river from which they had descended and stayed in the harbour?

To those who are familiar with our fast-running rivers, many of which have rapids and falls, it is one of the miraculous wonders of nature that these tiny fish can surmount such places to their homes. In the Waikato River for instance, the ascending of whitebait past the Aratiatia Rapids and the Huka Falls on their journey to Lake Taupo in countless numbers must be regarded as an extraordinary achievement.

Sometime prior to 1900 as a boy at Brunnerton on the grey River, West Coast of the South Island of New Zealand, I can well remember catching whitebait as they ascended that river. Day after day, week after week, during the spring months shoals of these small fish pursued their way up the river. It was no trouble to catch a bucketful in a few minutes. So plentiful were they that if I received 6d. or 1/- for a bucketful it was considered a good price. They were fed to the fowls and ducks until the eggs had a fishy taste. I can remember my father using whitebait as garden manure. The supply exceeded the demand.

Galaxias attenuatus, minnow or inanga (the parent of whitebait), is greenish-yellow in colour and sometimes spotted with brown. The spots are composed of numerous minute dots. This fish has the dorsal fin well back towards the tail and opposite the underneath, or anal fin. The fish is smooth and devoid of scales. The female inanga begins to breed when not quite three inches in length. It is a very prolific fish and a female not quite 3 inches long was found to carry 1,500 eggs. One over 5 inches in length had over 13,000 eggs.

I have often been asked the record catch of whitebait for one man in one day. In 1925 one man caught 240 pounds in the Waimakariri. The best catch in my records is from Wataroa River, West Coast of the South Island, when Mr J. Howden secured over 1,100 pound single-handed one day in November, 1928. Mr Howden not only caught half a ton of whitebait but packed it that day on horseback to Matanui township from whence it was sent to Christchurch.

During my mosquito investigations in the Auckland district, it was found that the parent Inanga was fond of mosquito larvae and any sheet of water inhabited by the fish was kept free from mosquitoes in the water stages.

The pollution of streams by sawdust is no small menace to the ascending whitebait. The erection of hydro-electric plants, and the felling and burning of native bush adjacent to rivers are other causes of their destruction. The whitebait industry is decreasing and one cannot help wondering if the day will come when the known breeding grounds will be made sanctuaries during the spawning months, a proposition bristling with difficulties.

The men who catch whitebait for a living want fewer restrictions. The Trout fishermen urge a restriction of the season of whitebait to increase the food for Trout. The Maori wants to continue to catch the inanga on its downward journey, his plea being the fact that the inanga is part of his food supply and comes under the Treaty of Waitangi.

English whitebait is made up mostly of young sprats, mixed with the young of

shad, herrings, sticklebacks, gobies and shrimps. In Japan the young of seaperch are called whitebait, and in Germany the young of various sea fish go under that name. In Italy it is the same, but in each case the fish are of a bony nature and inferior to New Zealand whitebait. *Galaxias attenuatus* is also found in Australia and South America, but not as abundantly as in New Zealand. The adult is known in Australia as jollytail.

The inanga when descending rivers to spawn, were taken by the Maori in great numbers. These adults, and also whitebait, were dried on mats in the sun and preserved for future use. Another method was to make a hot fire over stones, clear away all debris, pile the whitebait on the stones, cover with mats and earth. After about half an hour the whitebait were packed into kits, in which they would keep in an edible condition for some months.

When the first catch of whitebait was made, some were set aside as offerings to the gods and the rest were consumed in a ceremonial feast. The cooking was done in five different ovens for different eaters: one for the priest, one for the chiefs, one for the women, one for the fishermen, and another for the bulk of the people. All such ceremonial performances were held to be highly necessary.

I have had verbal records of inangas being kept in captivity, but the most authentic is in a letter from Mr A.H. Johnstone, of Koromiko Street, Christchurch, who caught an inanga in the Waimakariri in March 1940 about 4 inches in length. It was taken to his home and liberated in a goldfish pond where it lived and thrived. It was fed on oatina, worms and life in the freshwater pond. In March 1948, this Inanga had grown to about 6 inches long so that in eight years, it had grown 2 inches. This inanga is tame and enjoys being ticked “guddled” and will accept that attention with apparent pleasure until the person is tired.

KAHAWAI

A kahawai caught in February and measuring twenty-seven inches in length was kept separate and an estimate of the number of shrimps contained in the stomach was made. The result was found to be three thousand five hundred and seventy shrimps, which must have taken quite a deal of catching. This will give some idea of the number of shrimps necessary to feed one fish and the question arises as to how many shrimps are eaten by one shoal of fish in one day! That the shrimps were only recently devoured could be seen by the state of digestion, as every shrimp was complete and could be separated from the mass. No kahawai were found in the stomachs of other species of fish; yet kahawai ate their own kind.

This fish has a variety of popular names, the most common being that of Sea Trout. It is sold in the fish retailers’ shops as such. It has a large and wide distribution, being found throughout New Zealand coastal waters and it is equally numerous at times in harbour and tidal rivers where it is netted in enormous numbers. It was found throughout the whole of the year in Otago waters, up and down the coastline following the configuration of the shore,

entering the harbours during the warmer months, returning to deeper water as the weather became colder. They were less abundant in deep water but were caught at The Rock in fifty fathoms and in lesser depths off Otago Heads on sandy bottoms.

During 1930 to 1934, Kahawai were still numerous, but according to fishermen who have been fishing for over forty years in Otago waters, not as abundant as in former times when boats and launches could be filled easily with these fish. There is no apparent reason for this change in abundance as the kahawai has not been over fished like other fish.

The largest specimen I have seen caught or on the fish market measured twenty-nine inches in length and weighed nine pound. Others measuring twenty seven and twenty five inches weighed eight and seven pound respectively. In a case of Kahawai it was found that the fish averaged twenty seven inches in length and eight pound in weight.

Kahawai will take almost any bait but prefer a moving bait and thus large numbers are taken on the barracuda “paw”, or by drawing a bright hook behind a fast moving launch.

In 1922, the late Mr George Tulloch caught large numbers in set nets while fishing for quinnat salmon off the Waitaki River mouth. Although they are as a rule surface fish, they are caught in deep water in various localities. We have caught them off Otago Heads and off The Rock in fifty fathoms on a blue cod hook with a piece of pigfish as bait. They were also taken by steam trawlers in the otter trawl, and hundreds have been secured in one shoot and thrown back into the sea.

In September, 1933, D.G. Gilberd wrote to me stating that M.J. Channing, of Wanganui, caught a kahawai at Castlecliff, which when cleaned, weighed seventeen and a half pounds and was 37 inches in length, which, as far as I know, is a record for New Zealand.

The following is a list of interesting facts that I have taken from “The New Zealand Whitebait Book” authored by R.M. McDowall.

1. Koaro whitebait (Galaxias brevipinnis) penetrate great distances inland and have been found in the uppermost reaches of river systems in many areas, including the Rotorua Lakes.

2. In pre-European times, Lake Taupo carried massive populations of Koaro.

Graham; “The ascending of Huka Falls by Whitebait on their journey to Lake Taupo in countless numbers”

3. It seems that the introduced trout have had quite disastrous effects on galaxiis, extinguishing populations in some areas and causing a decline

in population in others.

4. The decline in trout condition in Lake Taupo in the 1920's followed the decline of koaro under heavy predation by trout.

5. A.H. Hefford, Chief Inspector of Fisheries (1944); 'The trout is one of the least of many factors operating against the whitebait'. (Lake Atiamuri hydro-dam on the Waikato River was commissioned in the 1920's)

6. Banded kokopu whitebait (galaxias fasciatus) penetrate substantial distances inland reaching localities that seem inaccessible.

7. Short jawed kokopu whitebait (Galaxias postvectis) move well inland.

8. Giant kokopu whitebait (Galaxias argenteus) seldom seem to move far inland.

9. Inanga whitebait (Galaxias maculatus) move into lowland waters rarely penetrating more than a few kilometres.

10. Every lowland water that is still or gentle flowing will have shoals of maturing inanga by the beginning of summer.

11. Of the five species of whitebait, only three - the inanga, koaro and banded kokopu - are caught in significant numbers.

12. Captain L. Hayes (1932); "Within tidal limits are mudflats bristling with salt rushes. Inanga spawn amongst rushes. Fairly long, thick growing grasses and rushes or similar vegetation is usually chosen. In March, I noticed Inanga evidently spawning everywhere amongst the rushes."

13. D.H. McKenzie (1904); "During the months of March and April may be seen at high water spring tides, countless myriads of small fish from 4 to 6 inches in length, making the water literally boil, wherever any rushes exist."

14. Thomas Brunner (1831); "Whitebait entering the rivers with the tide are in good numbers. They are in such shoals that I have seen dogs lapping them from the stream."

15. The early Maori were careful conservers of their resources.

16. Best and Hiroa; "The first or last whitebait run was allowed to escape to ensure that the stocks were not depleted."

17. R. McDonald; "In the old days Maoris would not catch the whitebait coming up the Hokio preferring to wait and take them when full grown they ran to sea to spawn."

18. In 1925, seven tons were canned from the Waikato River in one day.

19. When runs were particularly heavy, even the canneries could not cope. For example, the cannery in Hokitika worked night and day but could process only a small proportion of the whitebait available.

20. By 1930, a substantial number of whitebait canneries were busy.

21. In 1944, 61,000 kg was canned from the Haast River. In that year, there was so much whitebait it was dumped by the dray load.

22. By 1950, the industry was in recession and many factories were closing down.

23. The policy seemed to be to get all you could then and let the future look after itself.

24. The gaunt remains of the Waikato cannery at Tauranganui stand as a reminder of a formerly thriving industry.

25. The first whitebait regulations were drafted in 1894.

26. 1912 saw a 10 month closed season on the Waikato River followed by its revocation the following year.

27. The difference between whitebait fishing in 1928 to what it was before, is as a cupful to a dray load!

28. A.H. Hefford (1927); 'The amount of whitebait devoured by fish is a very small item indeed as against the huge number that whitebait netters take from the stream.'

29. There is no record at all of the quantities of whitebait caught in New Zealand water until 1927. In 1927, the Marine Department reported that depletion had been almost universal.

30. C.A. Whitney (1930); 'By this time it must be evident to the Government that the whitebait is slowly being wiped out.'

31. The first comprehensive regulations on whitebaiting were drafted in the 1930's.

32. Hefford, Chief Inspector of Fisheries (1930's): "It would be disastrous to wait until depletion and deterioration were so marked as to be patent to all. The time has come for restriction upon Whitebaiting."

D.H. Graham (1930); "Kahawai not as abundant, with no apparent reason for change, as Kahawai has not been over fished like other fish"

33. McDowall; "Manawatu river productivity in the early days was undoubtedly due to vast areas of lowland swamp. These provided

extensive habitat for inanga, giant kokopu and banded kokopu. Swamps have been drained, streams channelised, the forests felled and the whitebait have largely gone. Low lying estuarine vegetated flats at the river mouth for spawning have also disappeared. It is no wonder that the fishery isn't what it was."

Early on three prime causes of decline were identified; excess take by whitebaiters; predation and the draining of swamps, backwaters and creeks near to and adjoining tidal waters. Opinions varied on the amount that each of these contributed.

Captain Hayes stressed the vulnerability of the spawning grounds and how the preservation of the habitat is critical to the survival of the fishery.

34. Hayes: "Inanga spawning rendered the embryos liable to considerable destruction under the conditions which now prevail. The danger from the trampling of grazing stock and the annihilation of possible spawning grounds as a result of grazing have been found to occur in practically all the localities investigated. One hoof mark would be sufficient to wipe out thousands of eggs, while it appears as if a herd of cattle could exterminate a whole bed of spawn. There would be no point in extending the possible spawning areas for a stock of fish which was too small to make use of such facilities."

35. McDowall; 'Captain Hayes emphasised the desirability of providing sanctuaries or feeding grounds for the adult fishes. Such feeding grounds have of course been greatly diminished in the course of civilised settlement by the drainage of swamps and lagoons and their conversion to agricultural lands. It would appear, however, that there are many places, areas of swamps, which are of little or no value to agriculture and in which permanent lagoons, which would accommodate considerable numbers of Inanga, might be formed as a result of comparatively simple and inexpensive work.

36. High catches in 1947 were followed by poor ones in 1948.

37. Roland Stead (1982): "There are those who would prefer to continue the unrestricted fishing in their time rather than give any thought to conservation for the future."

38. McDowall; 'Wetlands are possibly one of the most endangered habitats in New Zealand, with thousands of hectares drained and converted to pasture each year. 84% of the wetlands in the Waikato Valley have disappeared in the last 140 years. Wetlands are undoubtedly a crucial habitat for Inanga. The populations of the various species have all declined because there is nowhere for them to live. It seems almost too simple to be true. And that's not all. Whitebait spawn in estuaries, and out of all the aquatic habitats, estuaries seem most fragile and prone to damage. Towns release effluent into estuaries often with minimal treatment. Further change is brought about by channelling river mouths,

constructing groynes, etc.

Is it any wonder then that whitebait have declined with the loss of habitat for the adults to live and grow in and the loss of the spawning grounds where the eggs are laid and the young hatch before going to sea? Of all the reasons suggested for the decline of whitebait, the destruction or modification of the habitat is in my opinion, a prime cause. Something could possibly be done to revegetate the estuarine spawning grounds. But for the most part it's too late. Forests and swamps have gone, streams have been realigned and channelled, vegetation in the estuaries has been killed by pollution or covered with fill and there is nowhere left for fish to live or breed. It is a sad story but by no means unusual. And it is still going on. If we don't protect whitebait habitat one day there will be nothing."

(Don Paterson, 28 Jellicoe Street, Te Puke: "Is it any wonder that the New Zealand coastal fishery is depleted? Fish eat fish and if the population size of the smallest fish is depleted then that must in turn restrict the population size of bigger fish. To further cripple coastal pelagic fisheries production, I suggest that one has only to harvest an already diminished resource while it is spawning, harvest it with set nets, with trawl nets and horsepower, or harvest it with seine nets and aeroplanes within the 12 mile limit, or increase the population size of a significant competitor for the remaining whitebait, the scad (decapterous koheru) by removing one of that competitor's population regulating predators, the striped marlin. Is it any wonder indeed.

The New Zealand coastal fishery could I believe be rebuilt from the bottom up with whitebait, if there was a mind to do so. Lowlands within a few miles of the tidal reach could be reflooded and whitebaiting could be outlawed. Native flora could be replanted along stream banks, pollution stopped, sediment traps built on tributaries in the form of ponds, and fish ladders could be built up waterfalls and hydro-dams. Stopbanks around tidal estuaries could be removed and wetlands made inaccessible to stock. Productivity of the New Zealand coastal fishery may in future be limited only by the degree of action that is now taken to restore it.

Past seasons of significant whitebait harvest have been followed by a decline in harvest during the following season. This may indicate a depressing effect that harvest is having on future population size and supports the assumption that galaxius marine life is six months. It follows therefore that protecting inanga and whitebait stocks from predation by man might most quickly rebuild the coastal fishery.

Migrating whitebait swim near the surface of dirty water, and deeper when water is clear or when in sunshine. Whitebait feed predominantly on stream bottom invertebrates so perhaps that behavior has been learned at sea. Much marine life rises towards the surface at dusk and retreats from light during the day. Whitebait which are thought to be six months old when they enter fresh water from the sea have not been detected in any numbers in the

oceans around New Zealand since Graham ‘frequently found them in the stomachs of sea fish’.

Galaxii occur in South America, South Australia and New Zealand, all of which share similar latitude and prevailing winds. One was found between Bounty Island and Antipodes Island, many hundreds of miles south-east of New Zealand. Perhaps lateral drift is moving some of them around the globe. It seems illogical to me that they would perish while juvenile and surrounded by food. Whitebait taken from south Westland rivers are bigger and fatter than those taken from other parts of New Zealand. Inangas were in the distant past reported as returning from the sea which may or may not suggest an extended salt water visit for some.

I believe that this country’s fishery holds greater potential for future economic gain than does the production of pasteurised butterfat. I believe that significant opportunity could be created from the harvest of a well managed coastal fishery. Restoration of an abundant and far more productive coastal fishery could, I believe, be led by a Maketu Estuary - Kaituna River restoration example.”

39. Douglas (1860): “Those Whitebait were created by nature to fill a large gap somewhere in the world of waters.”

Graham (1953) re hapuka: “The place was over fished even during the spawning season and consequently much smaller hauls were evidenced. The prevailing wanton methods of fishing, including over fishing had in 1930 - 34 intensified exploitation during the spawning season, resulting in a serious decline in numbers and size of the fish and called for control over the situation. Roes containing a million eggs per pound weight were sold. If this waste was going on, what must have been the total loss to New Zealand?

Such a loss, appalling in its magnitude, even in a marine environment could not be viewed with equanimity. The maintenance of a stock of fish and its relative abundance from year to year, and its continuity depend more probably on how many fish were allowed to spawn rather than on the loss of the young fry from predatory fish. It is surprising that a thinking community would permit this to go on.”

And it is still going on!

Devonport Whitebait that are caught illegally in the north under lights are juvenile anchovies. Herrings are yellow eyed mullet. Smelt which live in salt water, return to and spawn in fresh water. Smelt populations in Lakes Rotorua and Taupo have been acclimatised. Bullies spawn in fresh water and are washed out to sea where juvenile bullies are called whale feed. I suggest that all of these little fish are important to the productivity of our coastal fishery.

Yours faithfully
Don Paterson

The following is a list of interesting facts about whitebait that I have taken from a Marine Department, Fisheries Research Division, Fisheries Research Bulletin entitled ‘Galaxius Maculatus, the New Zealand Whitebait,’ authored by R.M. McDowall.

1. Galaxius maculatus is the most important whitebait species and makes up 85% of the population.

2. The breeding biology of galaxius maculatus and factors affecting the juvenile migration are most significant and relevant.

3. For breeding purposes, galaxius maculatus migrates downstream into tidal estuaries and downstream migration occurs before spring tides.

4. The majority of galaxius maculatus migrate downstream to breed in tidal estuaries between January and April and sometimes much later.

5. Spawning occurs after spring tides and fecundity is up to 13,500 eggs.

6. Few galaxius maculatus appear to survive spawning.

7. Galaxius maculatus spawns in tidal estuaries and either in salty or fresh water but usually in areas affected by an upstream tidal push.

8. Spawning takes place in tidal estuaries and typically on flat grassy banks which are exposed at all times of the tidal cycle except at high spring tides.

9. Spawning beds are most often found where the ground is covered by spring tides but not by normal high tides, although sometimes they are found below this level.

10. Thick vegetation, usually grass, is generally necessary for spawning.

11. Eggs are sticky when spawned but only until fertilised.

12. Eggs develop amongst vegetation and above normal high tide level.

13. Since much of the breeding habitat of galaxius maculatus is above normal tidal levels, egg predation is unlikely to be a factor of much significance.

14. Eggs usually develop within two weeks and hatch at the next spring tide cycle but may still hatch after two months without immersion in water.

15. Hatching is stimulated by immersion in water.

16. Eggs will hatch in fresh or salt water.

17. Larvae hatch at between 6 and 8mm.

18. Larvae are washed out to sea upon hatching and are predatory carnivores.

19. Larvae are pelagic. Upon their return to fresh water they feed on a wide range of stream bottom invertebrates with a small proportion of surface forms.

20. Whitebait migrate from the sea at all times of the year.

21. Most whitebait migrate between August and November with some late runs of significance until January.

22. Galaxius maculatus shrinks as it enters fresh water from the sea.

23. Regional differences in the size of migrating whitebait suggest that there is not free mixing of the whitebait stocks in the seas around New Zealand. This is further supported by regional differences in the composition of the whitebait catch observed.

24. Stokell (1955) believed the age of whitebait at migration from the sea to be 18 or even 30 months.

25. McDowall believes that the adult galaxius maculatus (Inanga) breeds at an age of about one year and that the life cycle is basically an annual one.

26. Whitebait hatched in captivity reached 15mm in length at an age of 3 ½ months which poses the question whether they could reach their migratory length of 50mm in just six months.

27. McDowall believes that juvenile marine life is probably 6 months and that galaxius maculatus matures during the first summer in fresh water and breeds during the following autumn.

28. Graham (1956) noted instances of galaxius maculatus breeding during September in the Bay of Plenty. (He also noted that an adult inanga in captivity in Christchurch grew from 4 inches long to 6 inches over a period of 8 years.)

29. Not all galaxius maculatus are one year old when breeding. Some are 2 or more years of age and comprise mostly females.

30. Maiden late spawners have been further up the river and produce more eggs than younger females.

31. Evidence of breeding survival shows that few galaxius maculatus may breed more than once.

32. The downstream limit for galaxius maculatus habitat is the upper estuary. (Graham noted the presence of adult inanga in Otago Harbour while not in spawning condition.)

33. There is a higher density of adults in the lower river and they are found in predominance in brackish backwaters.

34. There are proportionately more males in the lower estuary.

35. From the high fecundity (number of eggs) and the large size of fish living in them, lowland bush swamps with brown water appear to be the ideal habitat for galaxius maculatus.

36. Five species of galaxius frequent the whitebait net as well as two species of retroprinna, one stokellia, three eleotrids and two elvers.

37. In most parts of New Zealand, the five species of galaxius are the only fish of commercial importance, although in the Waikato River and some Thames rivers retropinna species are commercially significant. Retropinna is more commonly called smelt. (The Rotorua smelt is retropinna lacusdris - Stokell.)

38. Galaxius maculatus is probably a source of food for several large predatory fishes.

39. McDowall (1966); ‘There is no evidence from published figures to indicate that there has been a permanent decline in the catch of the West Coast fishery since records began.’

40. McDowall (1966); ‘There seems little reason to conclude that the recent poor years are anything more than a normal irregular fluctuation of the fishery, which cannot at present be explained.’

41. Waugh, Director, Fisheries Research Division, New Zealand Marine Department (1966); ‘Considerable concern has been expressed about the possible effect on whitebait stocks of intense fishing and of agricultural and industrial development in the river catchments. Populations are subject to considerable natural fluctuations irrespective of these factors.’

42. Philips (1940); compared the remarks of Mr A.J. Rutherford who had seen cartloads of whitebait coming from the Hutt River in 1880 with the situation there in 1940, when there were “seldom enough whitebait to entice the local fishermen to catch them”.

43. In 1965, the commercial catch of whitebait in New Zealand was valued at $232,856.

44. Clark (1899); ‘The extent of the shoals in the South Island West Coast rivers at times were incredible. Often, I have seen surface areas several

acres each in extent, covered some inches in depth, with these fry used as topdressing manure. One hopes that the supply will last and be properly fostered to allow sufficient to be left for annual reproduction.'

45. Graham (1956); described the taking of whitebait as they ascended the West Coast rivers before 1900 when a bucketful could be caught in a few minutes. "They were fed to fowls and ducks until the eggs had a fishy taste. I can remember my father using whitebait as garden manure. The supply exceeded the demand."

46. Hope (1928): "The Whitebait fishery is a valuable, national asset but under the present system of fishing the whitebait is in extreme danger of extermination."

47. Hayes (1932); "There are dangers from the trampling of stock and annihilation of possible spawning grounds through grazing. Deciduous trees make the ground beneath them unsuitable for the herbage necessary to give cover to the spawn, the effect of willows on the banks of streams, swamp drainage and use of chemical weed killers."

48. Stockell (1955) considered that a major influence had been drainage of swamps and lowland streams.

49. McDowall (1966): "Other likely causes are changes in rivers through land development and overgrazing of pasture land which has caused flooding, chemical pollution from use of fertilisers, man's wasteful exploitation of whitebait in the early days of the fishery. The number of whitebait fishermen has increased considerably as better roads have made rivers more accessible. Habitat range has been restricted by weirs and hydro-dams."

50. There are numerous reasons for the decline in the whitebait fishery.

51. Stockell (1955): "A major influence has been the drainage of swamps and lowland streams. The protection of its habitat in certain localities would be in the interests of the fishing industry."

52. Externally imposed changes in habitat (for example, by man) are probably less important in the rivers of the south than those of the north.

53. The fishery in the little modified southern rivers remains highly productive.

54. The remote underdeveloped West Coast of the South Island is the only whitebait fishery left.

55. In 1964, the rivers of Fiordland between St. Anne Point and Puyseger Point were closed to whitebaiting.

    What sacrifice is made to our coastal fishery by the removal of a single

returning juvenile whitebait, so stopping many thousands of its progeny from following it in ensuing years? Whitebaiting in New Zealand is now comparatively non-existent and so is our coastal fishery.

Don Paterson
Bay of Plenty Game Fishing Charters
26 Jellicoe Street
TE PUKE
Mobile #(0274)517-947 Fax #(07)573-9363

30th October, 1991

Mr Roydon Thorburn
Proprietor
Turangi Lodge
TURANGI

Dear Roydon;

I have just read the enclosed newspaper article for the first time and my heart goes out to you blokes down there. You will see from the enclosed copy material that we are both looking at the same problem from different directions. I want the koaro back in Lake Taupo in numbers to support coastal fisheries food chains and I suggest to you that you need the koaro back in Lake Taupo to get the big trout back.

I agree that the Tongariro River has suffered terribly and I am saddened by that fact. However, having seen how many fish were spawning in the upper reaches of one of Lake Taupo's other tributaries last year, and in the face of evidence that I now present to you, I must conclude that the removal of the koaro connection at the bottom of the food chains is of far greater significance to Lake Taupo's trout.

I appear alone in attempting to see Maketu Estuary's restoration occur in a way that will set an example for the potential rebuilding of the coastal fishery, with spin offs for the inland lake fisheries. I suggest to you that if you were to rally support for my writings amongst Taupo fishermen it could help to roll things to our mutual advantage.

Tight lines
Don Paterson

9th October, 1991

Mr Denis Marshall
Minister of Conservation

Parliament Buildings
WELLINGTON

Dear Sir;

Thank you for your letter of 30th September, 1991. Many theories and apparent reasons have been proclaimed to date for the decline in coastal fish stocks. Human intervention in its many forms has proven to be the most significant of these. I believe that this is due more to bad timing and the use of inappropriate harvesting techniques than to over harvest.

I have since 1987 attempted to inform a Minister of Fisheries that if pelagic fish populations were protected while spawning, if trawlers, Danish seiners and set nets were to become a thing of the past, if tuna longliners and purse seiners were kept outside the 12 mile limit and restricted by the quota system from catching all but those species which migrate annually into New Zealand territorial waters, and if the oceans were seeded with juveniles of preferred species as does occur in Japan; production from New Zealand's coastal waters could be increased significantly. Increased revenue and employment opportunity would be created and the comparatively few people who currently profit significantly from exploiting what is left of a natural resource would be the only ones to be made worse off.

I believe that the extent to which whitebait plays a pivotal role in coastal fisheries production is enormous, because it is a link that is near to the bottom of the food chains. The significance of that statement will remain indeterminate until whitebait are made to become prolific. Growing whitebait could I believe, in terms of achieving production, be likened to a farmer growing grass with the volume produced being directly related to seasonal production.

The preservation of whitebait as a species as mentioned in your letter, through protection of spawning areas and adult habitat is commendable, even if it is 10 years late. Human intervention could in future represent habitat reconstruction to replace habitat that once existed naturally. Restoration of Maketu Estuary and its surrounding wetlands; which once provided spring tide inanga, kokopu and koaro spawning habitat, that was once in connection with the waterways of the Kaituna River, with enormous potential for inanga and kokopu habitat creation in its tributaries and with potential koaro habitat in the form of the extensive Rotorua lakes; could prove the whitebait connection theory. It could lead this country with physical proof towards wholesale habitat re-establishment, followed by an enormous increase in the production of the New Zealand coastal fishery. I believe that it is the creation of habitat to replace that which has erroneously been drained and reclaimed that is important to the production of the fishery.

There appears little doubt that coastal species of fish eat smaller fish like pilchards, sprats and juveniles, which I surmise eat whitebait, which is surmised eat marine plankton, which doesn't appear to have altered in abundance to any marked degree. The volumes of nutritious native vegetative

matter that once flushed down this country's waterways when the land was still heavily forested may have contributed to the cycle in some way. While it does not seem practical to re-afforest all of the country, it does seem logical to again make whitebait prolific.

Protection and re-creation of adult whitebait habitat, would I expect be mirrored in degree by a comparative increase in pelagic fish further up the food chains. It follows that limiting saline whitebait populations in any way would also limit the productivity of the New Zealand coastal fishery. The seasonal whitebait harvest may one day be recognised as a tradition to which this country can attribute significant deficit. If we still had a much more significant coastal fishery we could with correct management practices be farming that fishery and so exporting far more than we currently are able to do.

Thank you for the offer of information from within your Department. I am when I can afford the free time, interested in the potential rebuilding of the New Zealand coastal fishery and in the future management of that fishery. I find it ironical that management of the depleted fishery should continue to be led by physical proof scientists who simply record what has already happened as opposed to being inventive, and by commercial fishermen who profit financially by the degree of exploitation that they impose upon the resource. The greater their degree of exploitation the greater seems to be their desire to influence decision making. Commercial fishermen have in general been witnessed to have been unscrupulous the world over.

Your Rotorua staff applied for and gained a water right from the Bay of Plenty Regional Council to re-introduce Kaituna River flow to Maketu Estuary through Fords Cut, despite my years of attempting to inform them that I believe there is a more advantageous site for reintroduction. An additional 90 acres of inanga habitat could be created between the Kaituna River and Maketu Estuary on marginal farmland that is currently owned by Mr Oliver Brain. From this site, silt could be flushed from the lower Maketu Estuary at no expense with Kaituna River flood water and so naturally strengthen the estuary sand spit. A similarly impractical water right application to dredge sand from the lower estuary in an attempt to duplicate nature by artificially enlarging the toe of the spit was defeated. Yet your Rotorua Conservancy staff have publicly stated that they still believe the action to be necessary.

I recently received the comment from your colleague Hon. D L Kidd, Minister of Fisheries, that it is not considered however, that the relatively modest population of inanga larvae would be sufficient, even at their peak levels early in the century, to support the various marine pelagic fisheries around the New Zealand coast. I find this more than a little disconcerting. Inanga population levels were at a peak before this century and commercial harvesting began. Inanga larvae did not I surmise, just support pelagic fisheries but also supported sprats, pilchards, juveniles and goodness knows what else that in turn supported those fisheries. Evidence of this can be gleaned from the success of jig fishing and from snapper being taken regularly on pilchards and other whole specimens like yellow eyed mullet for example. There appears to

be a persistent inability to comprehend within the Fisheries Ministry, which dates back to when Mr David H. Graham first wrote about protecting fish while they spawned, and about preserving whitebait stocks.

Yours faithfully

Don Paterson

BAY OF PLENTY TIMES, FRIDAY, SEPTEMBER 27, 1991

SEA LETTUCE

Sir;

Timing of the Matua sea lettuce bloom mirrors the timing of the Maketu Estuary sea lettuce bloom, which has been observed to annually coincide with seasonal pasture growth rates. Pasture growth rates are largely dependent upon seasonal weather patterns and upon soil nutrient levels. As seasonal weather patterns have remained unchanged the significant increase in sea lettuce spring growth rates must be attributable to an increase in nutrient levels.

Sea lettuce is but one example of the disregard that has prevailed both within this country, and upon this planet for the natural health of the waterways. Water right applications to discharge effluent are currently being heard within this region and one might well ask what right they have to pollute our water.

The rivers and streams of our world are mirrored by the arteries and veins of our bodies. The pollution of either can only result in degeneration, death and the end of the illusion. We have perhaps been fortunate that this planet has a reservoir of life blood in the form of the oceans, or it might already have gone the way of our ancestors. They practised dietary ignorance and so suffered the consequences of degenerative disease and an early grave. To be fair they did also poison themselves and each other with drug medication while under the guidance of professional pushers and the old boy network.

The parallel would be to spray a sea lettuce symptom with one of the toxic poisons on the market and pollute the environment still further under the illusion that the problem would then go away. Matua residents who complain of rotting sea lettuce might rather smell more nostrums in the form of Bay of Plenty sprays. Sprays would kill more microbes and other forms of marine life at the bottom of the ocean food chains that did the tractor tyres on the mudflats.

Having recently read someone as noteworthy as Sir Bob Jones supporting nuclear fusion in the columns of your newspaper makes one realise just how bad the pollution problem is. A huge shift in consciousness and a change to widespread dietary awareness could lead this population to lead this planet away from degenerative disease and the significant future problems that we

are creating for ourselves and our children. Imagine for instance what farm produce could be worth to this country in the future, if it was all grown organically, even if you only think in dollar terms.

Don Paterson

9th August, 1991

Mr Bill Kirk
Editor
New Zealand Fisherman
Private Bag 9
Parnell
AUCKLAND

Dear Bill,

I have given your offer to publish my writings in the form of letters to the editor some considerable thought.

I am at present involved with attempts at Maketu Estuary restoration in a bid to gain an example that could lead the way to the rebuilding of our coastal pelagic fishery with the saline whitebait populations that used to exist.

You can no doubt imagine how hard it might be in the future to completely outlaw the practice of whitebaiting in this country. I enclose a first step for your interest. Please contact me if you would like to discuss the matter further.

Yours faithfully

Don Paterson

16th July, 1991

Mr R B Gardner
Manager
Environmental Regulation and Monitoring
Bay of Plenty Regional Council
P O Box 364
WHAKATANE

Dear Sir;

Thank you for your letter dated 2nd July, 1991. Please find enclosed copies of evidence and accompanying photographs that I intend to present in addition to this letter at the forthcoming Maketu Estuary Restoration, Water Right Application hearing.

Sluice gates mentioned in my earlier correspondence and possible modifications to the Kaituna River mouth in the form of a weir are due to recent insight, unnecessary. I believe that the area of land that is surrounded by Papahikahawai Island, the 1971 subsidised rock protection, the Kaituna River stopbanks and the adjacent beach sand dunes could and should be reflooded to allow optimum restoration of Maketu Estuary.

The area which is below sea level would act initially as a storage lake and settling pond for heavily silt laden Kaituna River flood waters. It would accept some Kaituna River water on a high tide and then release it on a receding tide through the Papahikahawai Channel. Lower estuary channels would correct themselves with flow from Papahikahawai Channel. Sediment flushed from Maketu Estuary and back out to sea would be moved by wave action to form a wider and eventually higher sand spit without artificial manipulation.

Significant flow through the Papahikahawai Channel would protect the spit from current flow which is at present initiating at the back or southern side of the estuary and which is eroding the spit. The channel which is presently blocked by the 1971 subsidised rock protection could eventually be cleared once channelisation had been initiated by Papahikahawai Channel flow, without causing a detrimental effect on lower Maketu Estuary sand spit stability. If sand dunes had scour potential adjacent to the Papahikahawai Channel they could be strengthened with material taken from the Papahikahawai Island stopbank, the 1971 subsidised rock protection and the Kaituna River stopbank where I have previously stated that I believe a one way flow structure should be constructed to receive Kaituna River water with inertia.

I draw your attention to the accompanying article on whitebait and so to the significance that the presence of maritime marsh spawning habitat, could have on the coastal fishery in this area. In the short term a culvert under the 1971 subsidised rock protection and the removal of the Papahikahawai Island stopbank would increase fresh water presence in the centre of the estuary and so assist with the re-establishment or maritime marsh in this area.

The flow structure in the accompanying sketch would permit part of a Kaituna River fresh water surface layer that exists above the salt water wedge, to enter the estuary on a high tide and in times of flood.

The intertidal manipulation of Te Tumu bar height by Kaituna River flow would ensure spasmodic inflow to Maketu Estuary and so eliminate a risk of flooding land surrounding the estuary. Because I propose the flow structure be built on the outside of a river bend, it would enjoy the previously documented advantages of less of the salt water wedge and less silt in suspension than would otherwise be the case.

I speculate that it may be advantageous initially to allow some salt water to mix with pollution laden Kaituna River fresh water and so dilute same before it entered Maketu Estuary on the high or flood tide. A flap gate would prevent water flowing from Maketu Estuary and into the lower Kaituna River. This

drops quickly on a receding tide due to erosion of the Te Tumu bar by Kaituna River flow.

The one way flow structure that I would like to build would permit a mixture of fresh and salt water to enter the estuary after passing through a channel filled with flow regulating rocks. The rocks would permit easy access between the estuary and the river for both spawning inanga and returning whitebait. To increase a Kaituna River flow rate into the estuary some rocks could be removed from the channel and the inverse would also apply.

Further to my objection to the Water Right application no. 2637 mentioned in my 16th December 1990 correspondence, I have recently been told that the granting of that water right and the mechanical removal of sand from within the lower estuary would kill aquatic life and so would be an environmental disaster. I believe that artificially stabilising the sand spit that was formed by wave action is a ridiculous suggestion. In light of the currently proposed reintroduction through Ford's Twin Cuts and so the inevitable erosive effects caused to the spit, I ask if a scour potential analysis has been done? I also believe that whoever supervised plantings on the toe of the spit, while it is in its currently fragile state due to directional current flow within the estuary from the south, must now accept an inevitable loss of credibility and face ridicule for their lack of foresight.

I believe that it is pitiful to credit a water-washed sand delta as being the original cause of current flow in the lower estuary. Has your Council considered how long it takes for sand to refill the connecting channel to the Maketu Estuary boat ramp once it has been mechanically excavated? A few days I have observed, because water does easily move sand. What a total waste of money mechanical work on the delta would be. I believe that flow must be initiated from the Papahikahawai Channel to prevent a recurrence of what can presently be seen to be happening to the spit.

In summary, my objections to both water right applications are based on the belief that there is a better and more cost effective way of achieving Maketu Estuary restoration and setting an example for the rebuilding of our coastal fishery, then that which has been proposed to date by Department of Conservation staff. I believe that my inventive ideas have not yet had a fair hearing. They entail utilising free energy that the Kaituna River provides in abundance to remove sand from the lower Maketu Estuary while letting the sand spit stabilise itself with wind and wave action, in natural isolation from erosion from behind.

I also believe that a natural freshwater oxidation pond on Te Arawa Maori Trust Board land immediately east of the Maketu Road pumping station and directly connected to the intertidal estuary, would be most advantageous to Maketu Estuary restoration. The connection of all farm drains currently entering Maketu Estuary to this oxidation pond would, I believe, reduce sea lettuce blooms and consequent suffocation of estuary life while further increasing inanga habitat.

Increasing the Kaituna River and Maketu Estuary inanga spawning habitat by future removal of a section of the stopbank sheltering farmland currently owned by Mr Oliver Brain, for example, could significantly enhance the rebuilding of our coastal fishery. A demonstrably efficient Maketu Estuary example, could eventually lead the way to questioning the past stopbanking and drainage of all coastal swamplands for pasture. One can only ponder how long it might take for public awareness to attain such heights given that the Maketu Estuary restoration saga has already dragged on for so long.

I enquire of your Council if the costs that I have incurred in attempting to initiate and then correct restoration proposals from the financial predicament of a sickness beneficiary employing alternatives, might be met by the applicant.

Yours faithfully

Don Paterson

28th June, 1991

Mr Kim Walshe
Regional Manager
MAF Fisheries North
P O Box 3437
AUCKLAND

and

Hon. D L Kidd
Minister of Fisheries
Parliament Buildings
WELLINGTON

Dear Sir;

I look forward to an opportunity of addressing the Bay of Plenty Regional Council in Whakatane regarding Water Right applications for Maketu Estuary restoration which includes the proposed re-introduction of Kaituna River flow to the estuary from, I believe, the wrong place.

I am attempting to see restoration occur in a way that will re-establish food chains while working with mother nature rather than against her and eventually set a precedent for the rebuilding of our coastal fishery from the bottom up with adult whitebait spawning habitat that used to exist. I tentatively invite your interest and enquire of your possible support at that hearing.

I believe that the New Zealand coastal fishery has been significantly affected by the depletion of whitebait numbers. Please notice in the enclosed literature

the correlation between the start of commercial harvesting of whitebait and the first recorded decline in kahawai numbers.

It would appear that whitebait numbers have been most dramatically affected by the reclamation of their spawning grounds to provide farmland. It seems ironical to me that farm produce is worth significantly less to this country's economy than would be the fish that it has replaced.

I see the re-establishment of Maketu Estuary and some surrounding lowland as whitebait spawning habitat connected to the Kaituna River, as being an ideal trial opportunity towards the rebuilding of our coastal fishery. A demonstrated recovery of fish numbers in this depleted area could spearhead future fisheries management towards the reflooding of some lowlands: Towards building fish ladders up hydro dams and screening turbine intakes in such a way as to direct descending koaro towards those fish ladders: Towards recognising the added value of freshwater swamplands; of forested watersheds and of pollution free waterways.

Yours faithfully

Don Paterson

17th June, 1991

Mr Peter Sharp
Northland Regional Council
Opua
BAY OF ISLANDS

Dear Sir;

My letter to you dated 14th February, 1991 enquired of you what I might best do as an individual to dispose of a waste petroleum based product in the vicinity of the waterways of the Bay of Islands, without polluting same. Further to that letter I have with very little effort collected some 200 signatures from residents in the immediate vicinity of the Bay of Islands. This token gesture should be enough to show that there is a very real concern within the community for the future state of those waterways.

I suggest to you that in the short term, collection facilities could be provided adjacent to wharves in the area and petroleum based waste could be collected and re-refined. Fuelling berths in the Bay could be surrounded with safety barriers to minimise accidental spillage and Council bylaws could carry severe penalty for anyone polluting waterways whether accidentally or otherwise.

In the longer term, I believe that the ideal situation would be the establishment of marina facilities as I have already described to your Council with a capacity to handle both toxic wastes and human effluent.

Yours faithfully

Don Paterson

20th May, 1991

Mr Bob Burstall
President
New Zealand Recreational Fishing Council
P O Box 99418
Newmarket
AUCKLAND

Dear Bob;

Please find enclosed the copy literature of which we have spoken. You will see that the Hon. Ken Shirley suggested that I should contact the President of the Big Game Fishing Council as long ago as the 12th July, 1990. I had thought that he meant John Chibnal and so I thought that I had. I was consequently delighted to learn of your interest.

You may find my 14th February, 1991 comment to Kim Walshe a little harsh. I didn't enjoy being called a nutter by John Chibnal or by Malcolm McGeorge.

I now look forward to an opportunity of addressing the Bay of Plenty Regional Council in Whakatane regarding water right applications for Maketu Estuary restoration which includes the proposed re-introduction of Kaituna River flow to the estuary from I believe, the wrong place.

I am attempting to see restoration occur in a way that will re-establish food chains while working with mother nature rather than against her and eventually set a precedent from the rebuilding of our coastal fishery from the bottom up with adult whitebait habitat that used to exist. I tentatively invite your interest and enquire of your possible support at that hearing.

Yours faithfully

Don Paterson

17th May, 1991

Mr Kim Walshe
Regional Manager
M.A.F. Fisheries North
P O Box 3437
AUCKLAND

Dear Kim;

Further to the enclosed letter dated 28th May, 1990 with which I addressed Hon. Ken Shirley and in addition to the final paragraph of that letter, I have recently learned that domestic commercial tuna longliners in Queensland waters take one dead marlin for every five tuna caught.

One can only hope that recently licensed domestic commercial tuna longliners in New Zealand waters do remain outside a voluntary 200 metre depth range limit and so away from a significant proportion of the fish that they seek to catch, for the sake of this country's future recreational fishery.

I suggest to you that extending boundaries pertaining to the commercial catch of marlin further south, is largely a waste of time, as striped marlin do not go in number far south of New Plymouth and Hastings respectively. A more practical extension of boundaries would I believe see the removal of trawlers/Danish seiners, purse seiners and tuna longliners from within the 12 mile limit and the removal of fishing in any shape or form except that which is hand held from within one mile of all New Zealand island ebb tide lines.

I have included with this correspondence copy letters to the Ministry of Commerce dated 8th May, 1991 and to the Ministry of Fisheries dated 17th May, 1991 for your interest.

Yours faithfully

Don Paterson

17th May, 1991

Hon. D.L. Kidd
Minister of Fisheries
Parliament Buildings
WELLINGTON

Dear Sir;

Thank you for your letter of 29th April, 1991 in reply to my letter of 14th February, 1991.

Surely MAF Fisheries research is only limited by the funding that is made available to MAF Fisheries by Government. I had not sought to displace existing MAF Fisheries research projects but had sought extra and additional Government funding for my research proposals.

I believe that if the future value of this country's coastal fisheries resource could be accurately realised by Government then there would be a dramatic increase in funding made available to MAF Fisheries research projects. I see

the future productivity of a well managed and diverse fishery that could exist around this country as being a key factor in our future economic well being.

With regard to advice quoted in your letter, I suggest that any advice is only as good as the realisation of those who are giving it. I look forward to an opportunity of proving the extent of my earlier claims.

Marlin research off Cairns would I believe greatly benefit this country's future economy by increasing marlin numbers in our waters and so prove the advantage of protecting spawning fish. It should therefore fall within the role of the New Zealand Ministry of Agriculture and Fisheries to at least initiate steps within Australian Government circles to see it occur.

I have enclosed a copy letter dated 24th January, 1991 from the Foundation for Research, Science and Technology, which demonstrates something of my so far unsuccessful personal effort, to gain funding to enable me to research the New Zealand subsurface marlin fishery. I will now take your advice and apply for a grant to enable to prove the existence of the striped marlin spawning ground as well as the New Zealand subsurface marlin fishery.

I have also enclosed for your interest my reply to Mr Kim Walshe, Regional Manager, MAF Fisheries North, dated 17th May, 1991 and I ask you to note the points that I have made in that letter.

I have also enclosed a copy letter to the Ministry of Commerce dated 8th May, 1991 for your interest.

Yours faithfully

Don Paterson

14th February, 1991

Fiona Edwards
Northern Conservation Officer
P O Box 7082
Wellesley Street
AUCKLAND

Dear Fiona,

Thank you for your letter of 31st January. I see Maketu Estuary in the Bay of Plenty as being capable of demonstrating to the people of this country and to the Government that our coastal fishery could indeed be easily rebuilt and quite quickly. Alas this does not appear to be the case and my extensive writings to DOC in Rotorua have fallen largely on deaf ears. My last chance to see it done right is soon to come up with the BOP Regional Council in Whakatane and a hearing, the date of which I have not as yet been notified.

Marine reserves and total allowable catches and investigating environment impacts of different fishing techniques are all wonderful ideas but they do not focus on the most important issue that is the rebuilding of food chains which support our pelagic fisheries, and which start in fresh water swamplands surrounding saltwater estuaries and harbour areas. Maketu Estuary in its currently near sterile form could lead the way to the eventual rebuilding of coastal wetlands and so the restoration of the coastal fisheries potential production if it is done correctly. This does not at present appear to be the case.

I have enclosed some other copy letters for your interest.

Kindest Regards

Don Paterson

4th February, 1991

Mr Peter Sharp
Northland Regional Council
Opua
BAY OF ISLANDS

Dear Sir;

I wish to enquire of you from my position as a luxury charter launch skipper based in Russell, what I might best do with a litre of dirty diesel. I am concerned that like quantities of similar waste may be finding their way into public waterways be it directly through disregard and environmental abuse by some boaties, or indirectly through seepage from public tips into ground water.

I am told that German research has shown 1 litre of diesel to be capable of pollution 1 million litres of ground water. I am also told that in Germany similar waste is burnt and the energy converted and reharnessed.

Diesel is but one example of waste that is not being catered for here in the Bay of Islands. I have an effluent collection tank aboard but there is nowhere for me to offload so it is not being used.

Please inform me how to dispose of the dirty diesel without polluting the environment here in the Bay of Islands or at any port that I might visit, where I might dispose of it, what will be done with it, when will it be done, and who is responsible for seeing that it is done in the best possible way.

Yours faithfully

Don Paterson

BULLETIN OF JAPANESE SOCIETY OF SCIENTIFIC FISHERIES (1977)

FISHERY OCEANOGRAPHY OF STRIPED MARLIN – II

SPAWNING ACTIVITY OF THE FISH IN THE SOUTHERN CORAL SEA

Eeji Hanamoto

Data of weight and appearance of gonads have been collected from tuna and billfishes caught by Japanese research and training vessels engaged in tuna longline survey. The present study is based on these data of female striped marlin, Tetrapturus audax, fished in an area extending between lat. 15°S and 30°S long. 150°E and 170°E in the Southern Coral Sea during 1966, through 1975. An examination of the gonad index of striped marlin in this area revealed the following information:

1. The examination of data reveals the gonad index being 1 at the initial stage of development, and exceeding 2.1 during the matured stage.

2. The ovaries start to mature sometime in late September or early October.

3. In October, mature fish (adults with mature gonads) are still relatively few in waters south of lat. 20°S.

4. The principal spawning season is between November and December. The main spawning ground appears to coincide with the fishing ground which extends between lat. 20° and 30 °S, and between long. 154° and 160°E. Mature fish comprise 60 – 70 percent of the catches made in the area during this season.

5. The minimum size of spawning fish was estimated at about 143 cm in length (eye to fork of caudalfin).

11th October, 1990

Mr Jeff Webster
Editor
Pacific Sportsfishing Magazine
C/- P.P.S. Publishing Pty. Ltd
6/55 Avalon Parade
Avalon
N.S.W. 2107
AUSTRALIA

and

Ms Margaret Fifield
Editor
Marlin Magazine
P O Box 12902
Pensacola, FL 32576
USA

and

Mr Pierce Hoover
Editor
Sport Fishing Magazine
P O Box 414
Mt. Morris
Illinois 61054-9916
USA

Dear Jeff/Pierce/Margaret

Further to my previous correspondence I am writing to ask you to place the accompanying advertisement in a position of prominence in the next issue of your magazine. When the advertisement has worked I will be delighted to pay you for it.

The protection of all fish species while they are spawning is what I am trying to achieve and it is I believe far more important that our immediate personal incomes.

Yours faithfully

Don Paterson

"A chance during December, to fish the striped marlin spawning ground in the Coral Sea: The adult breeding population of striped marlin is concentrated to spawn for one whole month. I offer you a money back guarantee that I can place you on these concentrated fish. Recognition of the existence of this recreational tag and release fishery could lead the way to the protection of these fish from commercial exploitation while they are spawning.

Written enquiries pertaining to my professional guidance should be forwarded to: Mr D.C. Paterson, C/- Post Office, Paihia, Bay of Islands, New Zealan

28th May, 1990

Hon. Ken Shirley
Minister of Fisheries
Parliament Buildings
WELLINGTON

Dear Sir;

Thank you for your 4th May reply to my letter of 30th March. With regard to your supposition that markedly increased recreational catches of striped marlin in northern New Zealand waters may be related to the 1987 moratorium on commercial taking of billfish, I am sure that I am not alone in wishing to stress to you that of course it most definitely is. Striped marlin numbers in our waters will not, however, return to those of days gone by until their population is protected from predation by man while spawning.

The longline net which used to prevent a lot of post spawning marlin from reaching our coastal waters has, to some extent, been limited and so the recreational catch of post spawning slabs that are heading for the decapterous koheru concentrations along our coastline has increased correspondingly. There is potential for a continuing improvement in this fishery while the longlines are kept at bay.

There is another, as yet unrecognised, marlin fishery of far greater potential and that is the concentrated population underneath the decapterous koheru concentrations. I intend to prove its existence with or without your help.

When I do present proof of an ability to detect and catch marlin at the Cavalli Islands until August, I presume that the New Zealand Government will then be prepared to provide me with a vessel and running expenses to enable me to prove the existence of the striped marlin spawning ground of which I have written.

I have initiated correspondence with Australian fisheries management agencies as an individual, as is demonstrated by the enclosed copy letters. I had hoped that your Ministry might take it from here. I am disappointed with your response thus far, which mirrors that of Hon. Colin Moyle, when in 1987 I initially wrote to him regarding the longline rape. Surely by now my views have earned enough credibility with your Ministry to prevent me again having to take aggressive action to have myself heard?

I have recently been told that commercial interests are seeking to fish for broadbill swordfish with set lines close to our northern coastline. This will of course mean that they will be fishing for striped, blue and black marlin and short billed spearfish at the same time and so will be competing with recreational fishermen in the same way that foreign longliners were allowed to, until 1987. I continue to hold the belief that the recreational marlin fishery has far greater economic potential than all other and when I get the chance I intend to prove the extent of my claim.

Yours faithfully

Don Paterson

THE CHRONICLE, SATURDAY 16TH JUNE, 1990

FISHERMAN CHASES PROOF OF FISH DETECTION METHOD

A Paihia man claims he can locate fish concentrations by means of a method using frequencies.
Don Paterson, a former Waikato farmer, is seeking Government funding to continue his research, which he says will draw global attention to New Zealand.
Mr Paterson has during the past four months, tried to persuade local fishermen to take him out on their boats to prove his ability but he says he is regarded as a crank.
“One charter skipper asked me what right I had to tell him where he could find fish when he had 30 years experience and I had next to none. I have spoken to 35 out of 40 skippers in the Bay of Islands but no-one is prepared to take me out,” he said.
He has written to former Minister of Fisheries Colin Moyle and his successor Ken Shirley about fisheries management and outlined his aims. While his

letters have been answered at length, appeals for funding have drawn a blank.
Speaking to The Chronicle last week, Mr Paterson declined to explain the technique which he says enables him to plot the movements of the adult population of striped marlin and of koheru, the food fish which the marlin pursue.
“The technology is worth a fortune and I want to prove it first,” he said.
Mr Paterson said he started wondering about the distribution of fish populations as a twelve year old boy. “I used to go fishing with experienced surfcasters who kept telling tales about amazing fish they used to catch. The fish the spoke about were simply not around anymore. I wondered where they had gone.”
His frequency detection method was not his own development, he conceded.
Mr Paterson sees an opportunity for the Bay of Islands to be acclaimed the best marlin fishing ground in the world (he supports the tag and release campaign) and he believes that his location of koheru and marlin will identify marlin spawning grounds.
Mr Paterson claims he has established a major spawning ground off the coastline off Cairns, Australia, and urges united action between the Australian and New Zealand Governments to protect it.
“I have told a number of Australian and American sportsfishing representatives and scientists that I would prove, here in New Zealand, the viability of technology which has allowed me to track the striped marlin population to their spawning ground two years running,” he said.
Three private trips in the Bay during the last four months had taken him to fish concentrations but he had still to work on the best baiting methods, he said.
“I have invented and manufactured a downrigger which will allow me to deep troll underneath koheru concentrations where the marlin wait in number and which I hope will be a winner. Mr Snooks Fuller will lend me his downrigger wire if I can find a boat and that is where things stand.”
Mr Paterson said if the Government would supply him with a game boat and running expenses, he could demonstrate marlin fishing “beyond everyone’s wildest dreams” – down the North Island as far south as Hastings on the east and New Plymouth in the west.
Bay of Islands fisherman Snooks Fuller said he had always thought that downriggers provided an answer when marlin went deep below the surface.
“I have never caught anything using downriggers but I know they do work”.
While he felt Mr Paterson should be given the change to work on his ideas, results could not be obtained in one or two weeks fishing, he said.
“The research would have to be done over two or three seasons,” he said.
Mr Paterson has been living in a caravan in the Bay of Islands and can be reached C/- Paihia Post Office.

30th March, 1990

Hon. Colin Moyle
Minister of Fisheries
Parliament Buildings
WELLINGTON

Dear Sir;

It might seem that I am a little slow in replying to your letter of 8th February, 1989. For your interest, I have enclosed a copy letter to medical professionals which should serve as adequate explanation of my reason. However, I now find myself in the same caravan in the Bay of Islands from which I initially addressed you regarding the foreign longline issue in 1987 and I take this opportunity to continue my correspondence with you.

With reference to your letter dated 8th February 1989, I wish to draw particular attention to the four main factors described in paragraph 2 which are recognised as governing the size of an unexploited fish stock. I also wish to draw your particular attention to the fact that all four factors are governed by the environmental parameters mentioned in paragraph 3.

With due respect for the qualifications of your scientific advisory staff, I do not believe that they yet have adequate understanding of a balance that affects the maximum sustainable yield of our coastal fishery. Constant sustainable fishing mortality determined by fisheries management scientists has so far been ridiculed by steadily declining biomasses. Fishing mortality will remain at a level lower than a possible maximum until fisheries mismanagement is corrected.

But fishing mortality is not the only unbalancing factor which has been brought to bear on the balance that used to exist around our coastline. A surplus production of our coastal fishery that should exist can only be available when environmental parameters remain unchanged. If environmental parameters are lowered consecutively with an increase in harvest of an adult population, then the population biomass must be detrimentally affected. If stock sizes are at carrying capacity then production can be maximum and not zero through management alone. Maximum sustainable yields can only come from a maximum stock biomass and not at some intermediate stock level.

Recruitment and growth are, I believe, currently being limited significantly. The carrying capacity of the coastal environment and so surplus production of our coastal fishery has been reduced by the destruction of adult whitebait habitat. I also believe that an as yet unrecognised effect of a decapterous koheru population explosion which has resulted from a significant reduction in number of the striped marlin, their main predator, has been the annihilation of the saline juvenile whitebait population upon which our coastal fishery is dependent.

I have previously pointed out to you that a constant sustainable fishing mortality can be increased by rebuilding food chains and that a reduction in total allowable catches while species are spawning will increase maximum sustainable yields, if those reductions are done consecutively with other steps that I did mention in my 5th January, 1989 correspondence. Fishing mortality is too high because of its timing alone and so the full potential of a resource is not being allowed to be realised.

To return to a theory used by your fisheries management scientists, I wish to query why the striped marlin population has experienced a dramatic decline in biomass while enjoying an abundance of their favourite food. Your advisors have, of course, been proven wrong by the striped marlin population. With technology further advanced than that previously available to me, I have been able to discover that although surrounded by an overabundance of food and largely removed from the effects of fishing mortality for most of the time, their biomass has shrunk in size dramatically because they are getting thrashed while spawning. I wish to correct an earlier statement in which I claimed that the striped marlin spawning ground was in international waters. It is, in fact, within the Australian 200 mile economic zone due to the fact that the Willis Group and Coringa Islands are of Australian sovereignty.

In the absence of apparent action being taken by your Ministry following receipt of my 5th January, 1989 correspondence, I took it upon myself to travel to Cairns at my own expense last December and to try to get the striped marlin spawning ground recognised as a significant sports fishery. The enclosed newspaper cutting copies tell a story of disbelieving charter boat skippers being unresponsive to my efforts.

I have told a significant number of Australian and American sportsfishing representatives and scientists that I would prove here in New Zealand this summer, the viability of the technology which has allowed me to track the striped marlin population to their spawning ground two years running. I told them that I would live bait concentrations of marlin and of decapterous koheru, the food fish which the marlin follows throughout the year. Simultaneous concentrations of both fish are spasmodically located down our northern coastlines all summer long.

I again find myself amongst disbelieving skippers here in New Zealand. One charter boat skipper asked me what right I had to tell him where he could find fish when he had 30 years of experience and I had next to none. I reasoned with him to no avail, that with the collective experience of all the skippers and my ability to pinpoint concentrations, we could soon deduce how to catch these fish. On another occasion one skipper asked another what he thought of the meatball detection idea that I have advertised in the game fishing clubrooms and the reply came back that the only meatball around here was on my shoulders! Some acquaintances of two years ago now look down when they see me coming. Very amusing stuff to look back on, but time is wasting while I am being delayed.

Three private trips have been enough to demonstrate to me that live baiting is not the best way to go. I have invented and manufactured a downrigger which will allow me to deep troll underneath the koheru concentrations where the marlin wait in number and which I hope will be a winner. Mr Snooks Fuller will lend me his downrigger wire if I can find a boat and that is where I sit.

I have approached Mr Shaughan Anderson, a Conservation Department staff member in Russell, and I have enclosed his reply. It typifies the response that

I have been getting since 1st December, 1989 in Cairns when I first started trying to raise the level of public awareness beyond the speed of an ability to comprehend. If you could in any way assist me towards a boat that I might experiment with I would be most grateful. If the New Zealand Government would supply me with a game boat and running expenses, I believe I could demonstrate marlin fishing beyond everyone's wildest dreams down the North Island's Eastern coastline as far South as New Plymouth. Significantly better fishing could be demonstrated off Cairns next December.

I enclose copy letters dated 9 and 17 January 1990, which demonstrate my efforts to convince Australian interests that they are sitting on a gold mine. It is, of course, more significant that while the entire global adult breeding population of striped marlin does concentrate off Cairns for one month, a large proportion of them are within range of our game fishing fleet for no less than eight months. Seeing them protected while they spawn will benefit this country significantly.

I also enclose a copy letter which I addressed to all New Zealand Game Fishing Clubs, for your interest. The Secretary of the Bay of Islands Swordfish Club recently confirmed that he was in receipt of the letter, yet the President of the Club and other members with whom I have spoken, still know nothing of my attempt to inform them about using koheru bait six months ago!

The significance of restoring the coastal equilibrium by increasing marlin numbers in our waters will be far reaching. Our commercial pelagic fish species do, I believe, all depend for their abundance upon the juvenile whitebait being prolific in number. Decapterous koheru have experienced a population explosion due to relief from their main predator, the striped marlin. I believe that they have, as a result, significantly reduced the whitebait population, further limiting the food chains that support our commercial pelagic fishery. Encouraging the establishment of wetlands bordering our estuaries and the protection of the striped marlin population while they are spawning off Cairns during December, will, I believe, see equilibrium restored to a significant degree.

I have enclosed some Japanese study statistics in support of my claim.

Yours faithfully

Don Paterson

15th January, 1990

Greenpeace New Zealand Inc.
Private Bag
Wellesley Street
AUCKLAND

Dear Greenpeace;

I first wrote to your wonderful organisation on 11th February, 1988 seeking support for the proposal that striped marlin be protected while they are spawning to gain example of extra productivity that could be achieved with similar action for all fish species. I believed then and still do now that a dramatic increase in awareness of the ocean's potential productivity through sensible management would, by its monetary value, convince those that are now polluting the ocean to stop doing so.

Mr Tim Gentle, Marine Ecologist, replied considerately but missed the point to a large degree and talked about the wasted potential of the ocean through over fishing.

I again wrote to Greenpeace on 24th February, 1988 stressing the significance of the striped marlin fishery because their rapid growth rate allowed them to reach maturity in 3 years and that they visited the territorial waters of many countries during one year.

I again stressed that it is not a wasted potential of the ocean through over fishing to which Greenpeace and the world needs to address itself but rather the wasted potential of the ocean through fish not being allowed to spawn in peace.

I include with this correspondence a copy letter and newspaper articles from which I hope Greenpeace might take a lead and help me to achieve next year what I was unable to achieve on my own recently.

Yours faithfully

Don Paterson

17th January, 1990

Mr Robert E. Kearney
Director N.S.W. Fisheries Research Institute
P O Box 21
Cronulla N.S.W.
AUSTRALIA 2230

Dear Mr Kearney;

Thank you for your considerate reply of 11th January to my letter to you dated 30th December, 1989.

With reference to paragraph 3 of your letter in which you describe concern over the wisdom of exploiting fish while they are aggregating to spawn, I wish to clarify my objectives to you.

I do believe that there is currently a wasted potential of oceanic productivity through fish species not being allowed to spawn in peace. I also believe that a dramatic increase in awareness of the ocean's potential productivity through sensible management of fish stocks would, by its monetary value, convince those that are currently polluting the ocean to stop doing so.

The striped marlin population is currently being exploited to the hilt while they are aggregated to spawn by Japanese, Taiwanese and Korean longliners and driftnetters I'll bet.

The spawning ground is not being fished by Australian interests and although it is within the Australian 200 mile economic zone it is not able to be protected as a result. If the ground becomes fished as a recreational fishery then the Australian Government will be able to use the same argument that the New Zealand Government used to ban longliners from our economic zone 3 years ago.

Proof of a subsequent and dramatic increase in striped marlin numbers will quickly lead the way to increasing the production of all fish species by farming them.

A tag and release recreational fishery would not interfere to any marked degree with the spawning activities of the striped marlin population.

Your reference to my opinion on the location of the striped marlin spawning ground is misleading as I have already clarified to the editor of the Cairns Post.

Yours faithfully

Don Paterson

NSW AGRICULTURE & FISHERIES

Fisheries Research Institute
202 Nicholson Parade
P O Box 21, Cronulla NSW, Australia 2230
Phone (02)527-8411

11th January, 1990

Dear Mr Paterson,

I am in receipt of your letter of 30th December, 1989 on the subject of striped marlin fishing grounds east of Queensland.

As the Director of the Fisheries Research Institute of New South Wales there is little I can do with your letter rather than note it as a matter of considerable

interest and forward it to those people whose responsibilities more closely relate to the promotion of the development of a fishery off the coast of north eastern Australia, that is Commonwealth Fisheries Researchers and appropriate Game Fishing Representatives (as for example those to whom I have copied this letter and yours). I notice you have already given your opinions rather wide circulation and that some rather lively discussion has already been generated.

Your opinion on the location of the striped marlin spawning ground could well be correct and this may well lead to the development of a new and significant fishery, but on the other hand, such a development may well be to the detriment of existing fisheries **for there is, for many species, grave concern over the wisdom of exploiting them while aggregating to spawn**. I am not in a position to debate this issue nor to provide research input into it, as the area in which you are interested is well outside that to which this organisation has any responsibility. Therefore, while I remain interested in your opinion, and would certainly like to be kept informed of collaborating or detracting information as it is accumulated, I regret that there is little I can do directly at this time.

Yours sincerely

Robert E. Kearney,
Director

9th January, 1990

Sent to:-

* Mr Peter Speare, Australian Institute of Marine Science P.M.B. No 3 Townsville, M.C. Queensland 4810, Australia
* Mr Robert Kearney, Director N.S.W. Agriculture & Fisheries Research Institute, P O Box 21, Cronulla, N.S.W., Australia 2230
* Dr. Meryl Williams, Assistant Director, Fisheries Research Branch, Bureau of Rural Resources Department of Primary Industries and Energy, C.P.O. Box 855, Canberra , Australia 2601
* Mr Peter Ward, Fisheries Research Branch, Bureau of Rural Resources Department of Primary Industries and Energy, C.P.O. Box 855, Canberra , Australia 2601
* Mr Frank Prokop, Senior Fisheries Office (Recreational) Division of Fisheries, N.S.W. Agriculture & Fishers, P O Box K220, Haymarket, N.S.W. 2001
* Bruce Downie, President, Gamefishing Association of Australia, 44 Formosa Street, Sylvania, N.S.W. 2224

* Mr Geoff McPherson, Northern Fisheries Research Centre, Box 5396, Cairns, Queensland, Australia
* Margaret Fifield, Editor, Marlin Magazine PO Box 12902 Pensacola, FL 32576, U.S.A.
* Mr Ray Moore, Thursday Island, P O Box 35, Queensland 4875, Australia
* Dr. Peter Davies, Senior Lecturer, Department of Physiology and Anatomy, Massey University,
Palmerston North

Dear

I am writing in attempt to gain support for something close to my heart. I travelled from New Zealand to Cairns in early December to promote an as yet unknown marlin fishing ground where the entire population of striped marlin gathers to spawn during the month of December. The ground is also active to a lesser degree during November and January. The ground is now losing fish in numbers and by mid January will be empty for another year.

I enclose with this correspondence a copy letter with which I addressed the New Zealand Minister of Fisheries some time ago. It sheds some light on why I feel it important that the striped marlin spawning ground does become recognised as a recreational tag and release fishery and so could then be protected from the foreign longliners that I believe are now fishing it.

I have for a little over one year been aware of technology that has enabled me to plot the movements of the adult population of striped marlin and of the koheru (decapterous koheru) the food fish that they spend their lives pursuing.

Having left the spawning ground last year both fish species spread throughout the Tasman Sea and down New Zealand's West Coast as far south as New Plymouth as well as down the Eastern side of the North Island as far South as Hastings and out into the Pacific to about half the width of the Tasman Sea. There were simultaneous concentrations of both fish species sporadically located along New Zealand's coastline throughout the summer months.

Others left the spawning ground to travel North of Australia and through to the Indian Ocean. Once they had reached the area off Cape Range they had dispersed sufficiently so as to become undetectable.

The Pacific population turned about face around April/May and travelled North. They evenly dispersed between New Zealand's North Cape and just short of the Southern tip of Japan with a similar latitude being maintained to the East while the population also spread West to and amongst the Islands of New Guinea.

October saw the population which was then well North of New Zealand, begin to approach their spawning ground in the Coral Sea, with a strong concentration of fish around New Guinea. November saw the entire continental shelf to the North and East of Australia evenly covered and

December again saw them concentrated in a similar position and motion to the previous year.

I have for the past month been attempting to interest Cairns based game fishermen into being the first to fish the ground. I have not yet been successful and on 11th January, I will be heading back to New Zealand as the ground will soon have been deserted for another year.

I intend to promote the previously mentioned technology for the first time in New Zealand this summer by live baiting concentrations of striped marlin with koheru and so catching fish one after another.

I have also written recently to all New Zealand Game Fishing Clubs and told them about the wonder bait koheru which has been thoroughly tested over the past two years and which attracts marlin as bread crumbs do sparrows. I expect at this stage to be fishing from either the Bay of Islands charter launch Aquarius owned by Mr Terry Pike with whom I have some ties or from the privately owned Te Ariki Nui and Mr Bill Hall. I expect you will hear a murmur of my success over here.

While this will be fun it is less than what I travelled here to Cairns to achieve. I believe it is most important that global attention be focussed on the potential productivity of our oceans as a tool to stopping the pollution and destruction that is now occurring. If I could have found $10,000 of sponsorship I would have taken a charter launch out to the ground and proven its existence with a video camera. I ask you for your support for what I am trying to achieve and if not this year then most certainly next and I wish you a safe and prosperous New Year.

Yours faithfully

<u>Don Paterson</u>

7th September, 1989

The Secretary
Big Game Fishing Club

Dear Secretary;

WHANGAROA BIG GAMEFISH CLUB INC, RD 1, KAEO
BAY OF ISLANDS SWORDFISH CLUB INC, P O BOX 31, RUSSELL
WHANGAREI DEEP SEA ANGLERS CLUB INC, P O BOX 401, WHANGAREI
AUCKLAND GAMEFISHING CLUB INC, P O BOX 6115, WELLESLEY STREET, AUCKLAND
MERCURY BAY GAMEFISHING CLUB INC, P O BOX 150, WHITIANGA
TAURANGA GAMEFISHING CLUB INC, P O BOX 501, TAURANGA
WHAKATANE BIG GAMEFISHING CLUB INC, P O BOX 105, WHAKATANE
TARANAKI CRUISING & SPORTFISHING CLUB INC, P O BOX 97, NEW PLYMOUTH
WAIHAU BAY SPORTFISHING CLUB INC, C/- POST OFFICE, WAIHAU BAY
GISBORNE-TATAPOURI SPORTFISHING CLUB INC, P O BOX 693, GISBORNE
HAWKES BAY GAMEFISHING CLUB INC, P O BOX 758, NAPIER
FIORDLAND GAMEFISHING CLUB, P O BOX 37, INVERCARGILL
TAUTUKU FISHING CLUB, P O BOX 1488, DUNEDIN
TAIRUA-PAUANUI DEEP SEA CLUB, PO BOX 62, TAIRUA
WHANGAMATA BOAT & GAMEFISH CLUB INC, GAMEFISH SECTION, PORT RD, WHANGAMAT
WARKWORTH GAMEFISH CLUB INC, P O BOX 174, WARKWORTH

Please find enclosed copy letters with which I have addressed the Ministers of Conservation and Fisheries. I ask your club to address the Minister concerned in support of my letters and to actively promote their contents within the community.

I believe that the current mismanagement of our coastal fisheries resource is a result of complacency amongst a national population who bemoan the loss of fish from our coastline and who in turn do little about it. If we want sportfishing of a standard seen in the past we must unite our population and use our common vote to steer this democracy clear of reckless commercial interests.

Sportsfishermen and women and this country's economy can only benefit from the sensible management of our potentially highly productive farm water. Is it coincidence that a decline in whitebait numbers due to the drainage of their freshwater habitat is mirrored by the decline of our pelagic fish population?

Widespread wetland establishment on currently unproductive pasture land could have a dramatic effect upon our national coastal ecology and fishery. Reconstruction of the freshwater swamplands bordering our coastline could with their food chains help to rebuild the coastal fishery towards its original abundant state. Fisheries management scientists who do not recognise that the snapper is a predator that is dependent on species further down the food chain, would experience significant enlightenment if fishing with live baits.

With the third season of the Government moratorium approaching and in support of a claim to Members of Parliament in 1987 that it would take just three years to rebuild our marlin fishery, I ask you to pay particular attention to the use of Koheru bait when trolling for marlin in the coming season. Koheru are the main food fish of the striped marlin and have proven by their movements to be entirely responsible for those of the marlin. The bait has now been well proven by the Bay of Islands charter launch Aquarius and will make a significant difference to next season's national marlin catch if widely used.

Yours faithfully

Don Paterson

OFFICE OF THE MINISTER OF FISHERIES – WELLINGTON, N.Z.

8th February, 1989

Dear Mr Paterson,

Thank you for your letter of 5th January, 1989. Your interest in fisheries biology is to be commended and accordingly I have summarised some of the principles of fisheries biology which guide the management of New Zealand's fisheries.

To properly manage a fishery, it is generally recognised that fish stocks are renewable resources and that the size of an exploited stock of fish is governed by four main factors. These are growth and recruitment, which tend to increase the biomass of the harvestable population and fishing and natural mortality which decrease the biomass. Fishing mortality corresponds to the commercial and non-commercial catch. Natural mortality is that caused by all factors other than fishing. Recruitment is the process by which eggs are laid, hatched, survive, and grow to the size at which they become part of the harvestable population. Growth refers to the weight gained by individual fish in the population.

An unexploited population will usually increase in size until limited by environmental parameters which may affect growth and recruitment and effectively place an upper limit on the size of the population. Such a population which is stable in age structure and size is said to be in equilibrium, where increases in biomass due to growth and recruitment are balanced by decreases due to natural mortality. However, when a population is small compared to the potential size that the environment can accommodate (termed “carrying capacity”) then natural mortality is low and growth and recruitment are high comparative to when the population is at or near the carrying capacity of the environment. As a population nears carrying capacity, competition for resources such as space and food increase, and consequently natural mortality increases and growth and recruitment decrease.

At first glance, it would seem that applying continual fishing mortality to a population must continually decrease stock biomass, but fortunately this need not be the case. If the initial population is at or near carrying capacity then as discussed above, natural mortality would be high and growth and recruitment reduced relative to their potential. Fishing mortality applied to this population would act to relieve the pressure of environmental constraints by reducing biomass to a level below carrying capacity but consequently allowing growth and recruitment to increase and natural mortality to decrease. This potential for increased growth and recruitment is known as surplus production. It is this surplus production which becomes available to harvesters without the consequence of further reducing population biomass.

Hence under a regime of constant sustainable fishing mortality, the population would reach a new equilibrium size and age structure whereby growth and recruitment are balanced by both natural and fishing mortality. It is this level of constant sustainable fishing mortality that fisheries scientists strive to determine and achieve for any particular fish stock. If fishing mortality is too high then more than the surplus production is harvested resulting in a decline in biomass. This occurs because there is a limit to the potential for increase of both growth and recruitment. Alternatively, if fishing mortality is too low then not all surplus production is harvested and the full potential of the resource is not realised.

The amount of production by a fish stock is related to the size of the stock. Clearly if the stock size is zero then production will be zero and similarly, if

stock size is at carrying capacity, production will also be zero, but at some intermediate stock level, production will be maximised. The stock size at which production is maximized is the optimal biomass for the fishery and the amount of surplus production by that stock biomass is the Maximum Sustainable Yield (MSY) to the fishery.

Therefore, in order to determine MSY and accordingly set TACs, fisheries scientists need to determine the relationship between stock size and production. This requires knowledge of annual growth, recruitment, natural mortality, fishing mortality and population size over a long series of consecutive years. Such knowledge is obtained mainly from data provided by the fishing industry, research vessels, and scientific observations. As the data accumulates, assessments of fish stocks by fishery scientists become more reliable but some uncertainty always remains.

A factor not yet considered in the above discussion of fisheries biology is the very real occurrence of random fluctuations in fish productivity. Just as environmental conditions fluctuate so too does fish productivity. This means that the sustainable yield from a fishery will fluctuate annually. In general, the shorter the life span of the fish species, the fewer the number of age classes in the harvestable population and consequently the higher the variability in sustainable yield. Alternatively, having many age classes in a population tends to buffer the effect of short-term variations in recruitment success and results in lower variability in annual production. Because TACs are not easily changed (especially downward) it is not possible to achieve the MSY every year given the variability mentioned above. It is therefore, a long-term average sustainable yield that most TACs attempt to make available to the fishing industry and some years this yield will be easier to catch than others.

Some of the basic principles for managing stocks of fish have been outlined above. The underlying assumption being that management strategies are able to be applied to a particular “stock”. This requires the definition of stock boundaries which in turn requires knowledge of the life history of the species and its range of distribution. If the fish show a high degree of mobility, then controls which are applied over only a small part of the species range are likely to have little effect on the overall exploitation of the stock as a whole, providing that the stock is exploited throughout its range.

I understand the point you are trying to make about the benefits of protecting fish populations during their spawning season and assure you that my staff of scientists also share your concern. Through their research they are able to determine what management measures are most effective at providing the maximum productivity available from a fish stock and when it is deemed necessary to protect spawning stocks it is done so.

By statistical methods it is generally possible to estimate the size and productivity of a fish stock prior to commencement of commercial fishing and then by monitoring the changes in these parameters with increasing fishing effort it is also possible to estimate at what stock size productivity is

maximized. It is this “optimal stock size” that our current management measures are designed to achieve and maintain for each fish species.

I’m afraid your statement that “maximum productivity from a fish stock can only be attained when that stock is protected from predation by man while spawning” is a little too simplistic as there are a lot of other factors to be considered. I ask you to accept that my scientific staff are well qualified for their positions and have as full an understanding as is currently possible about the life of fish and the dynamics of exploited populations.

I am encouraged by your interest and informed opinions on the subject of New Zealand’s fishing industry and invite you to pursue your interest further by continuing to write to myself or any of my Ministry staff. I recommend that you contact the Regional Fisheries Management Officer of MAFFish in Auckland at the address below should you require more information on striped marlin or snapper.

Hore, Regional Fisheries Management Officer, MAF Fish North, 10-14 Hobson Street, Auckland.

Minister of Fisheries – Colin Moyle

5th January, 1989

Hon. Colin Moyle
Minister of Fisheries
Parliament Buildings
WELLINGTON

Dear Sir;

I reply to your letter of 18th May, 1988 and continue to discuss the merits of protecting striped marlin while they are spawning to gain example of the effect that similar action could have on the New Zealand snapper fishery. You state in your letter that current understanding of the spawning and recruitment of most marine fish species in New Zealand waters is that its success in any given year is more dependent on environment factors than on adult stock size. It seems ironical that although environmental factors have remained relatively constant the adult breeding stock size of marine fish species has mirrored the depletion of the coastal fisheries resource. Your letter also states that large numbers of fish eggs promote the growth and development of large numbers of predators which in turn reduces the survival rate of the eggs. If this had a detrimental effect on adult stock size then the abundance of fish on our coastline before the advent of the commercial fishing industry could not have occurred. You state that theory used in determining the maximum sustainable yield for a fish population given the limitations of its natural environment, holds that maximum productivity from a fish stock in terms of growth and assuming constant recruitment is achieved at a

population level half that of a totally unexploited population. You imply that this theory is used in determining the maximum sustainable yield of the New Zealand snapper fishery. It is impossible to gauge the size of a totally unexploited fish population while you are preventing part of the population from reproducing, so rendering inadequate the theory used. Maximum productivity from a fish stock can only be attained when that stock is protected from predation by man while spawning. The decline in global fish populations following exploitation during the period of congregation prior to and during their spawning period proves this to be so and is in direct contrast to the managed trout fishery.

There are currently long term international tagging programmes directed towards understanding the movements and patterns of exploitation of striped marlin throughout the Pacific basin. This research could be significantly hastened by the satellite tracking of tagged fish as has been done with blue fin tuna. We are currently witnessing the annual migration of striped marlin to our coastal waters. During the two previous months of November and December I believe and I have obtained confirmation that these fish have been concentrated in an area of the Coral Sea to the North and East of Australia. They have been doing their utmost to breed successfully amidst mile upon mile of Japanese, Taiwanese and Korean longline. Female marlin with ripe ovaries are dragged aboard the ships which are ruining this country's sport fishery. Into refrigeration each takes with them many millions of unfertilised eggs representing the potential abundance of their species. With bilateral agreement these fish could be completely protected while spawning and the effect on their numbers gauged. The prolific days of 1949 when more than 900 fish were landed at Mayor Island alone could be just a few years away. The striped marlin has an incredible growth rate with the fish being caught in our waters averaging just four years of age.

The more dependent a country is on its harvest from the sea the more it stands to gain from realisation that the most detrimental influence to a fish population is predation by man while that population is spawning. It is with this reasoning that those countries currently crippling striped marlin reproduction could be convinced to stop. The striped marlin fishery could quickly prove the ability to increase oceanic production through management alone without detrimental effect to our economy and with the certainty of boosting our tourist industry. It is significant that striped marlin spawn in international waters and through the course of their lives they visit the territorial waters of many countries. Realization of the potential gain in food harvest obtainable from a managed ocean fishery would provide tangible evidence to these countries against the pollution and destruction of our oceans. Fishing around this country is exactly following the example of populated coastlines in the northern hemisphere. We have watched Japan overfish her breeding stock resulting in the need to artificially support acclimatisation with fish farms. New Zealand having witnessed the mistakes of other countries is ideally placed to take advantage and so protect fish species while spawning.

Imagine, a coastal fishery free from the deadly effects of the trawler which inefficiently damages a large proportion of its catch while killing the juveniles of species and often damaging their habitat. A coastal fishery free from the deadly efficient purse seiner within the 12 mile limit and then only allowed to harvest migratory fish species. The prohibition of commercial fishing of all fish species during their spawning season and of commercial fishing within one mile of every coastline where the juveniles of species live and the prohibition of set nets. All fish would be caught by hook in perfect condition and one at a time. Manpower requirement would replace the horsepower currently being used and dissolve a lot of unemployment. Restriction limiting recreational catches could be lifted and free trade would lower the price of fish to the consumer. A steadily increasing fish population due to an expanding breeding base would be reflected by a steady increase in overseas exchange earnings with fish killed individually providing an exportable product of the highest quality.

Maximum productivity of our coastal fishery will be limited by the past destruction of food chains through the pollution and the drainage of our waterways. Lowlands surrounding tidal estuaries could in future be seen to be more productively employed if reflooded to provide a starting point for the food chains which support our pelagic fish species. Maketu Estuary on the Bay of Plenty coastline is an example of deprivation of the potential abundance of a coastal ecology through mismanagement, which could be rectified to enhance the productivity of our coastal fishery. I include with this correspondence an article outlining how that rectification can occur.

The tourism industry would be catapulted beyond expectation if New Zealand became known as the angling capital of the world. An increase in recreation, employment opportunities, numerous personal incomes, overseas exchange earnings and a subsequent improvement in the national living standard all hinge on one thing. That is the protection of striped marlin while they are spawning and the subsequent proof that management alone can vastly improve the oceans productivity. Striped marlin are particularly partial to decapterous koheru. Following discovery in June 1987 and having witnessed the superiority of trolling this bait fish during the 1988 season, Mr T.R.L. Pike (owner/skipper) of the Bay of Islands charter launch Aquarius and I would now like to offer this knowledge publicly in the hope of increasing angling experience and of promoting this potentially very significant tourist industry.

I congratulate your recent efforts to protect salmon from unscrupulous trawlermen. You have of course protected fish that are congregating in preparation to spawn to the future improvement of the salmon fishery.

Yours faithfully

Don Paterson

5th February, 1988

Hon. Colin Moyle
Minister of Fisheries
Parliament Buildings
WELLINGTON

Dear Sir;

The tag and release programme currently being promoted is a logical second step in the restoration of the marlin fishery to its former glory. The first, being the relief achieved by the elimination of longliners from our economic zone. Widespread public acceptance of the tagging programme could be more quickly achieved by promoting realisation of the benefits of returning potential spawning fish to the water.

Female marlin spawn many millions of eggs, being multiple spawners and spawning five or six times during a spawning season of over one month. These established facts are easily obtainable upon research. Records of the proximity in which female striped marlin with ripe ovaries have been caught in abundance by longliners during November and December, are also obtainable.

The effect of New Zealand game fishermen returning potential spawning marlin to the water is insignificant in comparison to the effect that could be witnessed should these fish be totally protected with bilateral agreement while spawning. Countries that have experienced a vast improvement in their marlin fishery following the elimination of longliners from their waters could be expected to support such a proposal.

If the public of New Zealand could recognise a marlin experiment as being a pre-requisite to proving the potential restoration of our snapper fishery, I believe they would give their total support to the tagging and release of all live marlin.

The general public is very aware of and sensitive to the plight of our snapper fishery. The depth of feeling is intense and is widespread throughout the community. The public could be encouraged to recognise the improvement obtainable to our coastal fishery by the total protection of fish species while they are spawning.

Yours faithfully

Don Paterson

HOOK, LINE AND SINKER by Ray Doogue (1967)

Some time ago I had a letter from Dallas, Texas, enclosing a newspaper cutting from a keen American angler. Under an Auckland dateline of 30th January 1965, and the headline which read "Deep sea fishing off Mayor Island has almost been eliminated by Japanese boats working off the coast," the Wellington representative of the Tauranga Big Game Fishing Club, Mr C. Dentice, said yesterday. In 1949, more than 900 fish were landed at Mayor Island. So far this season only one has been caught.

There has been a gradual decline since the early fifties when the Japanese began working the coast of New Zealand – boatmen were still taking tourists out to Mayor Island to try their luck but lack of catches was causing them to lose heart.

What hurts my angling friend from Dallas more than anything else is the information disclosed by the Japanese that these beautiful fish are destined to provide the filling for fish sausage. This is of course, perfectly correct; such fine sporting species as black marlin are viewed most favourable for this purpose.

I have heard many theories advanced to explain the disappearance of these fine sporting fish. It has been claimed at various times that the ocean currents have changed their course, that there is a shortage of the fundamental food, and that there is a shortage of the deep sea piper which they follow.

I have seen the opinion expressed that these fish come in cycles and that one of these fine days they will be back again. But I'm certain of what is happening to our game fish – and there is no return from a fish sausage.

SALTWATER FISHERMAN by Ray Doogue (1976)

Marlin have been drastically reduced in numbers to provide fish sausage for the Japanese. In a burst of fishing off our coats, they nobbled almost the lot in under 10 years. During this period, if they found sufficient high-grade tuna (albacore) they cut the marlin off their longlines and let them drift away, preferring to fill their limited refrigerated space with more expensive species.

Two American marine biologists who accompanied a Japanese fishing expedition into the Eastern Pacific Ocean reported that the catch of striped marlin in that area rose from 200 fish in 1956 to 127,000 in 1963.

Above all else, politicians in control of our fisheries should act on precise knowledge based on comprehensive research rather than considerations of export trade balances.

GONE FISHING compiled by Tony Orman (1983)

The onus is now on Government and departmental circles to honestly look at themselves. Denials from officialdom have been frequent. There is no scientific evidence… my advisors tell me… we're earning increasing amounts

from fishing… and so on, ad nauseam. There has been scientific evidence and warning and it has been ignored.

The public is quick to blame commercial fishermen. It is misplaced blame really. The villains are the "powers that be" who allow things to happen. The commercial fisherman cannot be expected to enforce his own controls. He expects the "experts" and bureaucrats to do that and to do it sensibly.

Looking back can have its drawbacks yet one cannot ignore the sad track record of Government mismanagement of sea fisheries. It does not inspire confidence. Something is sadly and alarmingly wrong in the corridors of the department when scientists' warnings are ignored.

Clearly the whole situation over the years needs investigation and careful post mortem, so that a stop is put to the short sighted scramble for short run profits… at the expense of our coastal fisheries.

April 1987

94 Members of Parliament

Dear Sir;

Thank you for your reply to my letter of 18th March.

The reason for an invitation to fish was because from my own experience I learnt that the reality of the situation really hits home when you experience the non event of Big Game Fishing.

I sent a circular letter to every Member of Parliament in the country because by your involvement in Government you have stated your extra commitment to your country and the welfare of its people.

Regardless of which part of the country you reside in or which port folio you are most concerned with, you must see the benefits to every New Zealander attained by an increase in revenue generated, both internally and from overseas. The potential of the Big Game Fishing Industry to do just that is unlimited. This potential industry is unique because it would require a minimal investment and could know no bounds.

Because the world population of affluent people is large and global travel is simple, the potential tourism industry waiting to be tapped is unlimited. Promotion of this industry would be simple, because as I am sure you realise, good fishing news travels faster than all other. There is no reason shy Big Game Fishing could not return to its proven past glory if the fish were left entirely alone.

Warnings about the demise of our Game Fishing Industry have been made publicly for more than twenty years. They are still not being heeded. I have included dated copies of relevant articles that I hope you will find interesting.

Commercial fishing is not damaging, but rather has damaged our reputation for Game Fishing. So it will go on until action to correct the situation is taken. The overfishing is not confined to the Bay of Islands area, but rather within the two hundred mile economic zone between the East Cape of the North Island and the North Cape, and should include the Kermadec Islands and surrounding waters, where it is widely believed striped marlin breed.

Those responsible for causing the demise of this great international tourist attraction are those who have been elected in the past by the people of this country to serve the country in the people's best interest. I implore you to make this unique opportunity to earn overseas exchange, your business, and to use the elected power which you are privileged to have to improve the situation in the interest of this country and its people.

I include with this correspondence a letter written by Mr T.R. Pike which I fully endorse as being the way to improve.

Yours faithfully

Don Paterson

18th March, 1987

Members of Parliament

Dear Sir;

I have recently moved to Russell in the Bay of Islands, Northland to work as a deckhand on a game boat.

I would like you to witness the investment that has been made in the industry and the potential that exists to reap tourist dollars, if only there were more fish to attract them.

There are others far more able than I to explain why the fish aren't here. Briefly, it is because Japanese and Korean Longliners have been and are being allowed to harvest these Game Fish in our coastal waters.

The Eastern Coasts of Australia and of the United States of America have proven that after just three years of relief from longliners the fishing does improve dramatically.

The amount of money being spent by the hardy few anglers who are prepared to chance their arm no matter how slim the odds, is a pittance compared to the revenue which could be generated should the fishing improve.

I invite you to split the charter four ways and come and have a go. Perhaps you will get a chance to experience the thrill of success that would bring you back again and again. It is far more likely that you will witness the fishless days that tourists and New Zealanders alike are having to bear.

The International Game Fishing Tournament has just finished here in the Bay of Islands. During the tournament, two hundred anglers fished for five days from forty four boats. Approximately ten hours were fished by each boat on each day. Simple multiplication demonstrates that there were a total of two thousand and two hundred hours fished during the tournament. The number of marlin caught was two.

The number of fish caught during the tournament has been dropping annually. The number of overseas anglers fishing has been decreasing each year. As a tourist attraction Game Fishing in New Zealand must be almost non-existent.

All overseas anglers with whom I could communicate expressed dissatisfaction at the Bay of Islands Game Fishery. The majority of these fishermen were very important people in their respective countries. The public relations they are offering overseas is frankly stating: "do not bother fishing New Zealand".

I personally wonder at the amount of revenue which could be generated both locally and from overseas if the fishing was allowed to return to its proven past.

I send you this invitation as an individual.

Don Paterson

15th July, 1996

Hon. D.L. Kidd
Minister of Fisheries
C/- Parliament Buildings
WELLINGTON

Dear Mr Kidd;

The oceans that surround our coastline must be farmed as opposed to harvested and harvesting techniques must be compatible with the maintenance of a population biomass. Maximum coastal fisheries production will result from time proven farming practices.

All species of fish must be protected while spawning. Set nets, gill nets, tuna longliners, purse seiners, trawlers and Danish seiners, must be kept outside the 12 mile limit and away from all islands.

Coastal food chains must be rebuilt with a whitebait population that used to exist. Freshwater adult inanga habitat and estuarine spring tide spawning habitat must be recreated.

If the oceans were restocked with juvenile whitebait, then they in turn would be followed by sprats, pilchards, herrings, scad and the juveniles of the commercial species.

If we stopped killing those juveniles and stopped destroying their habitat, this country could achieve maximum coastal fisheries production. Intelligent harvesting techniques could utilise manpower while catching fish individually in perfect exportable condition.

Marine reserves must be established around our coastline to restock areas that are harvested.

Pollution of our coastline in every form must be severely outlawed.

Fish could exist in abundance for both commercial and recreational fishers, if they were allowed to do so.

The New Zealand 200 mile economic zone has the potential to be the greatest and most productive farm in the world; its produce of incredible monetary value to this country's economy.

The 12 mile territorial sea could become known as the Fisheries Heritage Protection Zone. Every New Zealand citizen could have a chance to enjoy the best and most productive salt water fishery in the world.

The Fisheries Heritage Protection Zone could be available to tourists from throughout the world at considerably more economic value to this country, than we are currently able to gain from the overharvesting of depleted fish stocks.

Yours faithfully

Don Paterson

2 April 2003

Dean Stebbing
Chairman/Director
Arawa Fisheries ltd.
Box 2496 Rotorua.
stebbing@arawa-waka-fisheries.org.nz

Hi Dean,

I have recorded many copy letters that I have previously written re Coastal Fisheries Management, on my Web Site www.gamefishingcharters.co.nz. I invite you to read them to gain an in depth understanding of how I believe that the enormous potential of Coastal Fisheries Production could be increased exponentially. I do not need to repeat their content here, other than to say, that Arawa Fisheries Ltd. does stand to make enormous financial gain from increased fisheries production and harvest, but also potentially from compensation for loss, due to land drainage causing destruction of Coastal Fisheries Production. All we need to do, to prove this, is to recreate an example of production.

My proposal is that the low lying land East of Maketu Road be re-flooded naturally, in isolation from pumping stations withdrawing water and perhaps by adding it from the adjacent drain instead and using Maketu Road as a dam. That the area be replanted with Raupo to recreate ideal brackish Inanga and Giant Kokopu habitat. These indigenous fresh water fish species could then be permitted to spawn in ideal maritime marshland spawning habitat, within Maketu Estuary boundaries.
We could then expect to see an enormous increase in returning whitebait, followed by sprats, pilchards, herrings, kahawai, trevally, snapper, kingfish and others. The number of returning whitebait would determine the number of kahawai especially, that would then return to a currently, comparatively fishless Maketu Estuary.

I therefore propose that Maketu Estuary could be protected from whitebaiting for experimental purposes, for sometime to come. I believe that when it is realised how significant that whitebait are to coastal fisheries production, and then they will be protected everywhere.

Please study the content of those copy letters carefully.

Kindest regards

Don Paterson
Maketu Taiapure Committee
HbT, SRF; SNTR
NZ Chartered Natural Therapies Practitioner

Natural Therapies
28 Jellicoe Street
Te Puke 3119
Ph 07 573 5533, 07 573 9403, 0274 517 947
www.naturaltherapiesltd.co.nz
www.gamefishingcharters.co.nz
nat.opc@xtra.co.nz

The Conservator, Bay of Plenty Conservancy Office
Box 1146 Rotorua

6 January 2003

Dear Chris

I personally believe that the proposed Marine Reserve at The Volkner Rocks is a wonderful idea. What better way could there be of ensuring a sustainable marine environment than by conserving it?

I note that the most vocal in opposition to the proposed reserve, are the relatively few charter boat skippers whose personal incomes could perhaps be affected in the short term, by the loss of part of their preferred easy picking financial nest egg.

I own and manage a private company booking agency that promotes charter boats to the wider public. I am also on The Committee of The Tauranga Charter Boat Association, The Bay of Plenty Marine Recreational Fishers Association and The Maketu Taiapure Committee of Management. My long held personal opinions on Coastal Fisheries Management are recorded on my Web Site www.gamefishingcharters.co.nz under the subtitle: Copy Letters.

I have long supported the creation of Marine Reserves around our coastline. I believe that everybody but the most naive amongst us must be able to realise that if areas are protected from predation by man, then adult breeding populations must therefore exist undisturbed and able to fill the surrounding ocean with juveniles of that species. We have seen other Countries fail to do this, possibly to the demise of their fisheries.

The logical place to create a reserve is an area where populations like to congregate with abundant food and so breeding opportunity. The spin offs from Increased Oceanic Production must benefit all and any one of us, rather than the comparative few who have regularly sold fishing experiences in that particular area to a comparative few, whether recreationally or with commercial intent.

There are of course other members of the public, other than fisherman, who value Marine Reserves for whatever reason, as well as other fishermen and fisherwomen, who do not fish that particular area very often, if at all and whose fishing opportunity may be being affected.

I was recently pleased to hear the Mayor of Western Bay of Plenty District Council state that he believed that the region would benefit greatly, from the abolition of commercial fishing between Cape Colville and Cape Runaway. I believe that he meant financially; but a resultant increase in local fisheries populations that must inevitably result from such relief of pressure on respective biomasses, would I believe, in turn see **Recreational Angling Opportunities increase enormously.**

This is exactly what the Volkner Rocks Marine Reserve Application in part, seeks to achieve and I therefore offer the proposal my full support.

I hope that those Committees upon which I sit and also those charter boats that I prefer to provide service to, might reconsider my personal opinions re the bigger picture: DOES NEW ZEALAND WANT THE BEST POSSIBLE, WIDESPREAD, ONGOING, ANGLING AND ECONOMIC OPPORTUNITIES,

OR NOT? I believe that Te Paepae Aotea Volkner Rocks Marine Reserve Proposal is a step in the right direction.

Kindest regards

Don Paterson
Maketu Taiapure Committee
HbT, SRF; SNTR
NZ Chartered Natural Therapies Practitioner

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Marine Recreational Fishers Association
B.O.P./Waikato

LETTER TO ALL CLUBS IN THE BAY OF PLENTY

Your Recreational Fishers' Association – the Marine Recreation & Fishers' Association Bay of Plenty – believes that the Government is not planning adequately for the increasing fishing pressures that will surely come from the increase in recreational fishers, with a rising population in the Bay of Plenty in particular. We believe that the first matter to be addressed should be commercial wastage before looking at commercial quotas and recreational daily bag limits.

We believe that the Association's PRIMARY OBJECTIVE should be 100% maximum sustainable yield on our fishing grounds, and to that end we propose that there should be a FISHERIES PROTECTION ZONE out to 12 nautical miles in the Bay of Plenty where commercial trawling, seining and gill netting on reefs would be banded.

NB. This would not affect Mataitai and Taiapure areas or marine reserves. In fact it would protect them.

Initially it is necessary to conduct a petition amongst all interested persons to gauge what degree of interest can be proved to the Minister of Fisheries. As this move has been the hope of all recreational fishers for 20 years all Fishing Clubs are asked to adopt this petition and run a survey in their area, the results of which should be returned to this Association by 1st December, 2001.

It is suggested that a cut out advertisement might be placed in the Club's newsletter and a petition for signing in clubrooms, as well as an approach made to the general population, etc. Clubs should feel free to conduct this initiative in their own way as their contribution. Its success will depend on that contribution. This could be the only chance for Clubs to work for the future viability of their local fish stocks.

So please get behind it. Get this petition out there and collect as many signatures as you possibly can so that we might sway the Minister of Fisheries. Some say that the only thing that we know about the future is that there won't be enough fish to go around and that we need to take action now.

Minister of Fisheries
Parliament Building
WELLINGTON

Dear Pete Hodgson, Minister of Fisheries;

We the undersigned hereby demand that you take immediate steps to initiate the creation of a Fisheries Protection Zone free from trawling, seining and gill netting on reefs, out to 12 nautical miles from the coastline within the Bay of Plenty.

We see those methods of harvest as damaging and wasteful practices which we believe are limiting the productivity of our coastal economy.

A Fisheries Protection Zone could allow the continuation of other commercial harvesting techniques for quota species and need not interfere with Taiapure or Mataitai areas, Rahuis or Marine Reserves.

NAME

FULL POSTAL ADDRESS

SIGNATURE

SUBMISSION TO RECREATIONAL FISHING RIGHTS JOINT WORKING GROUP ON SOUNDINGS DISCUSSION DOCUMENT

Authored by Don Paterson

13th December, 2000

The coastal fishery was once dynamic. All of this country's flat lands were flooded and supporting huge populations of fresh water fish species. There were no hydro dams cutting off the passage of koaro and kokopu (which are parents of whitebait) to and from fresh water lakes.

In the Bay of Plenty/Waikato area, 80% of whitebait were reportedly parented by inanga. The inanga does not travel more than a few miles inland from the sea to live its adult life in fresh water before spawning in maritime marshland and making whitebait more prolific in the surrounding ocean.

European colonisation of New Zealand with its clearing of forests and draining

of swamplands has practically eliminated fresh water fish species habitat. It could I believe, be accurately claimed that the grassland farmer is the saltwater fisherman's greatest handicap. He has unwittingly destroyed the freshwater food chains which supported the once prolific coastal fishery. It follows that we could easily increase the production of the coastal fishery with its incredible potential economic value to this country, by re-establishing coastal wetlands. Refer David H. Graham, Marine Fisheries Investigation and Biological Station Biologist and author of 'The Treasury of New Zealand Fishes'. Also refer R.M. McDowell author of 'The New Zealand Whitebait Book' and a Marine Department Fisheries Research Division, Fisheries Research Bulletin entitled 'Galaxias Maculatus'.

As the New Zealand population grows so too does its sewerage disposal problem. We now see our biggest city Auckland unwittingly dumping its sewerage problem on the Bay of Plenty via the Auckland current. It is perhaps fortunate that crayfish find this attractive and we have witnessed a population increase. But we have also witnessed an increase in the incidence of sea lettuce and poisonous algae blooms and shellfish bed closures and bottom covering tube worms that may or may not be connected. Is treated sewerage causing these changes?

Maketu Village in the Bay of Plenty is currently studying ways of disposing of sewerage in septic tanks on individual properties, which could become a problem with population increase. Maketu is adjacent to an estuary with maritime marshland which inanga prefer to use as ideal spawning habitat. The maritime marshland is adjacent to hectares of privately owned flat land, which could be turned into a series of settling ponds that could be planted to purify water, before it entered Maketu Estuary. Those ponds could represent inanga habitat without predatory trout being introduced to quell an inanga population explosion.

If Maketu Estuary did witness an increase in the presence of whitebait as a result of creating ponds for habitat and for water purification, followed inevitably by kahawai, snapper, trevally, kingfish, etc. we would then have a recipe for sewerage disposal without pollution, for increased coastal fisheries production and for unprecedented overseas exchange earnings potential, because it would be a model for further increasing coastal fisheries production.

My submission to Hon. Doug Kidd, Minister of Fisheries, dated July 1996 and endorsed by BOP/Waikato Marine Recreation and Fishers Association Committee, did outline other ways of increasing coastal fisheries production. Commercial harvesting techniques like trawling for example which damages habitats like kelp and black coral and kills juveniles, are forever eroding the potential of our coastal fishery to produce to its potential. Those same fish that trawlers are catching could be taken individually on long lines in perfect condition, while simultaneously providing employment for many extra individuals.

We protect crayfish while they are spawning and with the quota management

system have witnessed a population increase. Why aren't we also doing the same with our fish species? Why do we protect trout while they are spawning if harvesting wouldn't make a difference to biomass?

Set nets have been banned internationally in open waters when called drift nets. Why are we killing fish indiscriminately on our coastal reefs with the same nets?

Marine reserves have been shown to increase fish numbers in adjacent waters. Why isn't this management technique employed more widely around our entire coastline?

Overseas exchange earnings from fisheries exports could potentially be increased significantly, as could revenue from tourism and its supporting infrastructure. It could all start now with a Maketu Estuary effluent disposal experiment if there is a public will to do so. Maketu Estuary is also on the downstream end of the Kaituna River waterway and it could be utilised to recreate the extensive maritime marshland spawning ground that formally existed. Trials have demonstrated that maritime marshland can be successfully replanted.

The inevitable consequence of a prolific commercial fishery is a prolific recreational fishery. There is no need for confrontation between different factions because we all stand to gain. We need education and co-operation if we are going to re-flood some farmland for greater overseas exchange earnings.

If the productivity of the entire 200 mile economic zone could potentially be increased by utilizing time proven farming techniques, there could be no need to discuss quota allocation in the Soundings discussion document.

If we were to eliminate wastage and stop the damaging harvesting techniques that are currently employed like trawling and set netting for example, while simultaneously recreating the fresh water wetland habitats that used to exist, we could in turn create incredible economic advantage for this country from both exports and from tourism.

Commercial fishermen will not likely want to give quota up to recreational fishermen without Government compensating. Government will not likely want to buy quota back from commercial fishermen to gift to recreational fishermen. However increasing the productivity of the coastal fishery could enable commercial quota to remain the same initially and then to increase. It could allow a recreational allocation to increase on a par with commercial. A very productive commercial fishery could inevitably be a very productive recreational fishery by default. It could also satisfy Treaty of Waitangi obligations to Tangata Whenua.

The means to satisfying all desires simultaneously are described in the following submission on Fisheries Protection Zones by Bill Burton and also in the preceding copy letters that I have written on the subject since 1989.

We could prove the potential to increase coastal fisheries production by recreating Maketu Estuary habitat and surrounding wetland habitats in isolation from pumping stations and from farm drainage. This could include recreating maritime marshland spawning habitat in Maketu Estuary and between the existing Kaituna River Waterway and Papahikahawai Island.

This could also include a weir to stop the Kaituna River salt water wedge at that point so that inanga, kokopu and koaro that spawn at the top of the salt water wedge, could enter Maketu Estuary over an overtopping structure and once again spawn in their preferred Maketu Estuary maritime marshland spawning habitat.

This trend setting fish farming venture could also be free from whitebaiters, set nets, trawlers and purse seiners within a fisheries protection zone but could still include long-liners and recreational fishers. An obvious increase in coastal fisheries production in that area could be monitored and set a precedent for the entire New Zealand coastline.

Kindest regards

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SUBMISSION TO RECREATIONAL FISHING RIGHTS JOINT WORKING GROUP ON SOUNDINGS DISCUSSION DOCUMENT

Authored by Bill Burton, altered only slightly to include mention of spawning fish and fully endorsed by Don Paterson

11th December, 2000

What is a Fisheries Protection Zone (F.P.Z.)?
A FPZ is a defined marine area where damaging methods and wasteful practices of all fishing are banned i.e. trawling, seining, set nets on reefs and harvesting of spawning fish.

What is the use of a FPZ?
A regional management tool to protect the marine biodiversity by removing negative factors so as to allow the resources the best opportunity to renew themselves. It would be adjunctive to and supportive of the QMS by plugging a great hole in the system that frustrates the quest for sustainable fisheries

i.e. wastage.

Rationale behind FP Zones

In the future one thing is certain and that is progressive stock depletion near our large centers of population. This will be caused not so much by commercial fishing as by progressively increasing numbers of recreational fishers. Already MFISH has warned of this expectation but offers no solution. Will they stand by and let it happen? If we continue to pursue the ' wait and see' policy we will one day see a hasty drop in commercial quotas and a big decrease in recreational bag limits – or even total closures. Before we resort to these drastic measures I suggest that we should take the precaution of making the very most of what we've already got and produce the very best conditions for the resource to renew itself. This means cutting out factors negative to sustainability, such as damaging methods and wasteful practices that are inherent in some commercial methods of fishing e.g. trawling, seining, set nets on reefs and targeting spawning fish and within appropriately defined areas. These method restricted areas set opposite main centers of coastal population and tourist fishing destinations, could be called Fisheries Protection Zones or even Fisheries Heritage Protection Zones to define the intent. NB. They are not recreational fishing protection zones. They are fisheries protection zones with the objective being sustainable fisheries.

While some areas already have some measure of protection, the initial list for FP zones might include the Bay of Islands, Hauraki Gulf, Bay of Plenty, Hawkes Bay, Tasman Bay, etc. as desired by the public. The intent is not primarily to benefit recreational fishers but is to ensure adequate fish stocks in areas under the greatest potential threat of depletion over the next 25 years for the benefit of all. The FPZ is thus a management tool adjunctive to and supportive of the QMS and as such should not have to be fought over. It would though plug one hole in the QMS, i.e. wastage. The FP zones would be managed by MFISH as usual and for local input could be monitored by a local multi-sector body which could make recommendations to MFISH. Maori customary areas would however have a priority and be made provision for within the zones as needed i.e. mataitai and taiapure areas.

Disadvantages of FP zones

Restriction of some commercial methods which may although should not, require compensation.

Advantages of FP zones

(i) Stocks should move towards 100% Biomass Maximum Sustainable Yield through the savings on wastage.
(ii) Provision of an ideal platform for research in which recreational fishers would willingly assist.
(iii) After the conditions were met it would provide the consultative 'level playing field' necessary for successful inter-sector consultations i.e. everyone is on an even footing with voting by sector and no casting vote.
(iv) Would provide conditions for a tourist fishing industry i.e. not far to travel.
(v) Management objectives compatible with Maori plans.
(vi) Would not exclude all commercials fishers.

(vii) Could be trailed for 10 years then re-assessed.
(viii) The FPZ seems to bear positive application to most of the Soundings questionnaire.
(ix) Minimal funding required after implementation.

Recreational Allocation in Total Allowable Catch
This allocation would give the recreational sector a legal status as a stakeholder and therefore a stake holder's right to a say in management decision making. From the recreational point of view this allocation is necessary to protect their bag limits. According to Government sharing out of fish stocks is the best way to share the fisheries and it needs to be made proportional for administrative reasons and to establish stock benchmarks. The recreational proportion of the TAC would need to be reviewed every 3 years to keep pace with increases in population or decreases in stock. On the speculation of increasing shares as stocks improve, the thought of increasing the shares should not be entertained unless stocks improved above 100% Biomass Maximum Sustainable Yield.

Recreational Priority
Basically the only kind of priority recreational fishers worry about is the priority of sustainability over all other factors. Truly sustainable fish stocks would eliminate a lot of problems and the effects of negative factors, so the priority over commercial question would not be so important within the FP zones and then neither would the necessity for the Government to consider buying quota for the recreational sector. However in the case of depleted stock and no FP zones the recreational priority over commercial becomes extremely important. Therefore in the TAC round the recreational sector should have priority over commercial and it should be equal to Maori.

Automatic Exclusion of Commercial Fishing Methods in a Coastal Zone
This is my option of choice if coastal zone means FP zone one in specified areas.

Suggested Procedure
Interested members of the public would decide that they want to exclude say, trawling, all seining, set nets on reefs and harvesting of spawning fish out to say 12 nautical miles from point A to point B on the survey map and remote areas could thus be excluded. This area could be called a Fisheries Protection Zone [or Fisheries Heritage Protection Zone]. It would be managed by MFISH and monitored by a multi-sector body which could make recommendations to MFISH. Commercial fishers would take full part so long as they were not employing banned methods. However it is vital that voting should be by Sector and with no casting vote for Chairman.

Validation of Special Zones
As time goes on recreational fishing will become even more important and will have to be accommodated for or socio-political problems will result.

Ease of Establishment of FP zones
Establishment would obviously be extremely difficult in view of the legal

protection surrounding quota rights and FP zones will not happen through consultation. However it is suggested that FP zones may be regulated as –

1. A management tool to control wastage for sustainable fisheries as wastage and sustainability are incompatible;
2. A vehicle to accommodate burgeoning numbers of recreational fishers through saving on wastage;
3. Socio-political considerations because supporting recreational fishing will increasingly bear on fisheries management over the next 25 years as recreational numbers increase and stocks fall.

It is further suggested that as FP zones are part of sustainable management practice, there should be no compensation awarded.

Dispute Resolution
The consultation/dispute resolution processes are ideals that I suspect will turn out to be both cumbersome and frustrating and unlikely to produce mutually satisfactory outcomes, unless the 'level playing field' problem is addressed. The intended processes might work for some minor matters but will most likely be ineffectual for major issues.

Lack of Recreational Support
I believe the cause to be complete indifference and disinterest of recreational fishers towards the politics of the fisheries and that this will continue unless depletion starts to affect their daily bag limit which is unlikely for some time or if licensing again becomes a serious question. They just want to go fishing for free and not be pestered by political issues. I believe that what is needed is something to get their interest. This might be a recreational vision of our own for the fisheries, accompanied by its goals and strategy to achieve them. A list of 6 goals has been formulated by Rec. Council but not a strategy to pursue them. I have suggested the FP Zone concept as that strategy.

Government Management of Recreational Fishing
Government should continue to manage but in conjunction with the Recreational Fishing Council. We have neither the necessary number of knowledgeable personnel willing and able to do the job nor the necessary funding. However Council must be able to agree or disagree.

Recreational Management Groups
We already have regional recreational associations which should become regional branches of the NZ Recreational Fishing Council, although with some regional independence of action. This would produce cohesion and continuity.

SOUNDINGS OPTIONS

Option #3
<u>Preferred</u> option but it seems there would be insufficient dedicated interest to build and staff a recreational bureaucracy in an ongoing way.

Option #2
Is the practical option and is my choice but in the following fashion:
a) Proportional allocation in the TAC to be reviewed every 3 years, for example;
b) Government to manage recreational sector in conjunction with NZRFC which must have the right to disagree.

The "Soundings" document provides for discussion of matters other than the options, so I wish to bring up a matter of sustainable fisheries, which is more important than virtually all else. Planning is about the future, not so much the present. It will be about working on what we think the fisheries situation will be up to, say, year 2025.

SUGGESTED EXPECTED FUTURE SITUATION
Commercials continue as always, controlled by the QMS and continuing to cause a WASTAGE drain of fish stocks through the hole in the quota system, created by inherently damaging and wasteful methods of commercial fishing. Added to this, recreational usage of fish stocks will be ever increasing due to a continuously building population in coastal areas. If not addressed, this dual situation will lead to eventual collapse of our inshore fisheries, albeit in an insidious fashion for slowness of recognition, this by year 2025.

The commercial "take" can be controlled by the QMS but the numbers of recreational fishers cannot be controlled. We can progressively cut daily bag limits, but this will be cancelled out by increasing numbers of fishers. The problem will arise despite the quota system, so we need some adjunctive pre-emptive measure to cope. MFISH has announced no plans to address this problem. If they persist in the "wait and see" policy, the inevitable result will be too little, too late, with too few funds to do it. History will bear this out.

SUGGESTED SOLUTION
We could make the very best of what we have got by eliminating factors negatively impacting sustainability, i.e. wastage from damaging and wasteful methods of commercial fishing viz. trawling, seining, gill nets on reefs and harvesting of spawning fish.

The quest for sustainable fisheries should start by tidying up our fishing habits before considering the cutting of respective levels of "take", which in the end, can go only so far. The untidy factors are those causing damage to the marine biodiversity and wastage viz. trawling, seining, set nets on reefs and the harvesting of spawning fish which must therefore be banned as they cannot be modified.

It would be unreasonable to suggest a ban throughout the territorial sea, so it is suggested that it be just where most needed i.e. opposite areas of greatest potential increase of population and tourist fishing destinations e.g. Bay of Islands, Hauraki Gulf, Bay of Plenty, Hawkes Bay and Tasman Bay initially. It is recognised that there is currently a degree of protection in some of these

areas.

It is suggested that the answer to the dilemma of inevitable inshore depletion lies in zoning of the fisheries in appropriate areas. It is further suggested that these zones be called Fisheries Protection Zones FP zones or even Fisheries Heritage Protection Zones FHP zones to define the intent.

It must be held that in tidying up the fisheries, FP zones are a management tool or management measure to meet an otherwise un-containable threat to sustainable fisheries. FP zones are meant to be supportive of and adjunctive to the QMS by filling the hole in the latter left by the problem of wastage and damage to the marine biodiversity. They are not aimed specifically at benefiting recreational fishing but at assisting the drive towards sustainable fisheries and as such should not require compensation of the perpetrators.

Other commercial methods that meet the criteria are still acceptable and Maori would have a priority to form mataitai and taiapure areas. If the Government does not take pre-emptive steps to prevent collapse in these most important areas the slide will mirror other over-harvested fisheries by 2025. It therefore becomes not a recreational problem but a socio-political problem that the Government cannot afford to ignore if it is to honor its stewardship responsibilities towards the public.

SUMMARY

It is suggested that the potential inevitable eventual collapse of inshore fisheries, despite the QMS can be averted by restructuring some parts of the fisheries through the employment of FP zones.

CONCLUSION

The idea may seem difficult to implement but to insist that difficulties of implementation due to the legal protection surrounding quota rights are insurmountable, is not acceptable given the importance of the circumstances to future generations. The inshore fish stocks are the marine heritage of future generations. What is the Government's stewardship duty if it is not to secure that heritage? Anything less is patently ignoring that duty. Where better and how better to protect that heritage than with Fisheries Protection Zones? Besides addressing the increasing recreational numbers problem FP zones would solve many other problems, from saving species like kingfish to removing the necessity for licensing as running costs would be minimal.

The FPZ or FHPZ concept is fully compatible with all the options of the 'Soundings' document and subsequent discussions including Maori rights and planning.

Finally, it is suggested that by 2025 recreation fishing will be just as important to the nation as commercial fishing in terms of public health and well being and indirect dollar value. We are talking about changes to perhaps only 3% of the total fisheries of New Zealand so what is unfair about that?

Yours faithfully

Bill Burton and Don Paterson

THE CHRONICLE, SATURDAY 16TH JUNE, 1990

FISHERMAN CHASES PROOF OF FISH DETECTION METHOD

A Paihia man claims he can locate fish concentrations by means of a method using frequencies. Don Paterson, a former Waikato farmer, is seeking Government funding to continue his research, which he says will draw global attention to New Zealand. Mr Paterson has during the past four months, tried to persuade local fishermen to take him out on their boats to prove his ability but he says he is regarded as a crank. “One charter skipper asked me what right I had to tell him where he could find fish when he had 30 years experience and I had next to none. I have spoken to 35 out of 40 skippers in the Bay of Islands but no-one is prepared to take me out,” he said.
He has written to former Minister of Fisheries Colin Moyle and his successor Ken Shirley about fisheries management and outlined his aims. While his letters have been answered at length, appeals for funding have drawn a blank.

Speaking to The Chronicle last week, Mr Paterson declined to explain the technique which he says enables him to plot the movements of the adult population of striped marlin and of koheru, the food fish which the marlin pursue. “The technology is worth a fortune and I want to prove it first,” he said.
Mr Paterson said he started wondering about the distribution of fish populations as a ten year old boy. “I used to go fishing with experienced surfcasters who kept telling tales about amazing fish they used to catch. The fish the spoke about were simply not around anymore. I wondered where they had gone.”

His frequency detection method was not his own development, he conceded. Mr Paterson sees an opportunity for the Bay of Islands to be acclaimed the best marlin fishing ground in the world (he supports the tag and release campaign) and he believes that his location of koheru and marlin will identify marlin spawning grounds.

Mr Paterson claims he has established a major spawning ground off the coastline off Cairns, Australia, and urges united action between the Australian and New Zealand Governments to protect it. “I have told a number of Australian and American sports-fishing representatives and scientists that I would prove, here in New Zealand, the viability of technology which has allowed me to track the striped marlin population to their spawning ground two years running,” he said.

Three private trips in the Bay during the last four months had taken him to fish concentrations but he had still to work on the best baiting methods, he said.

“I have invented and manufactured a downrigger which will allow me to deep troll underneath koheru concentrations where the marlin wait in number and which I hope will be a winner. Mr Snooks Fuller will lend me his downrigger wire if I can find a boat and that is where things stand.”

Mr Paterson said if the Government would supply him with a game boat and running expenses, he could demonstrate marlin fishing “beyond everyone’s wildest dreams” – down the North Island as far south as Hastings on the east coast and New Plymouth in the west.

Bay of Islands fisherman Snooks Fuller said he had always thought that downriggers provided an answer when marlin went deep below the surface. “I have never caught anything using downriggers but I know they do work”. While he felt Mr Paterson should be given the change to work on his ideas, results could not be obtained in one or two weeks fishing, he said. “The research would have to be done over two or three seasons,” he said.
Mr Paterson has been living in a caravan in the Bay of Islands and can be reached C/- Paihia Post Office.