Kai Kōrero

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- *Te Tiaki Mahinga Kai* gathers momentum
- Kanakana: meet this slippery tāonga
- meet some of the flaxroots and TMK team

mihi
greetings

Ki ngā karangatanga maha o te ao, whakarongo ki te ngaru e papaki mai ana ki uta	To the many identities nationwide behold the waves crashing on the shore
Haere ngā mate haere	Remember those who have departed
Whati pai ana te kanohi ora	Whilst those of us who remain (alive) continue unabated
Ngā iwi, ngā hapū haere tōtika te haere	Each tribe and sub tribe be strong in your resolve to forge a pathway ahead
Kaua e kotiti atu i te huarahi kua para nei mōu	Do not stray from the direction you have set
Kia kaha, kia māia, kia manawanui	Be strong, be resolute, be determined
Tihei mauriora	Greetings

RK

Te Tiaki Mahinga Kai

UNIVERSITY of OTAGO
Te Whare Wānanga o Otāgo
NEW ZEALAND

Kai Kōrero is the magazine of the Mahinga Kai project. It is published by Kā Rakahau o te Ao Tūroa CSAFE (Centre for the Study of Agriculture, Food and Environment), University of Otago.

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www.csafe.org.nz

about our name

For readers unfamiliar with Te Reo Māori , the name 'Kai Kōrero' has two interpretations. 'Kai' means 'food', and 'kōrero' is 'talking about' – so we are talking about food. As well, 'kaikōrero' (one word) are orators or discussion leaders (usually on the marae) – so we are leading discussion (about mahinga kai). This name was suggested by Rau Kirikiri, our senior Māori adviser to the programme.

cover image

This frilly seaweed is called karengo by Māori. It scientific 'genus' (ie. group of seaweeds closely related to this one) is called *Porphyra*. In this case the karengo species shown is *cinnamomea*. One of the upcoming research projects for TMK is to test traditional methods for reseeding karengo.

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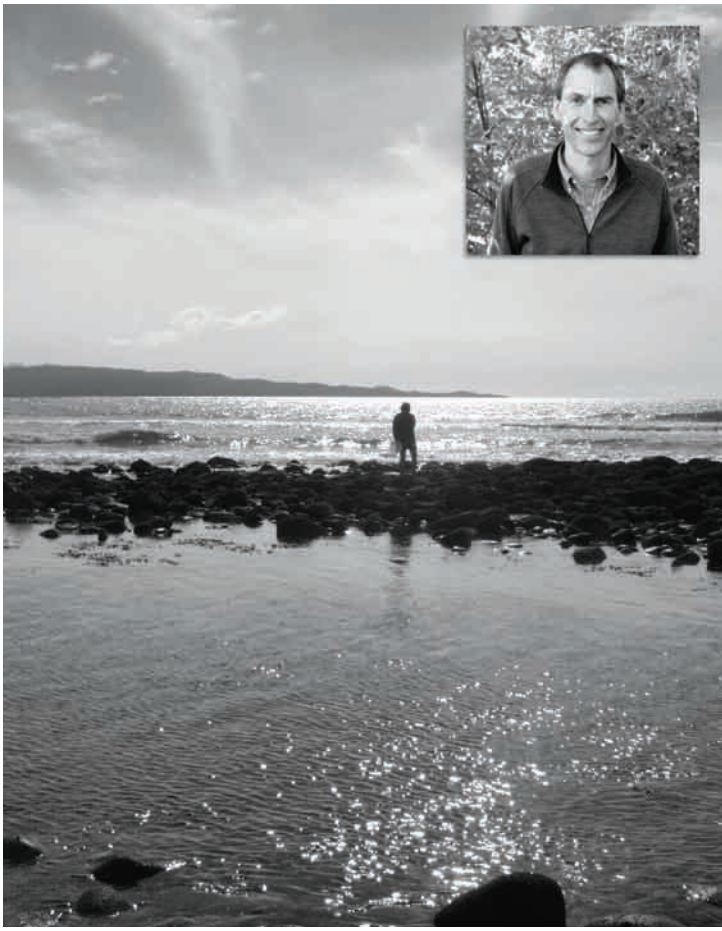
Funding lifeblood for *Te Tiaki Mahinga Kai*

Te Tiaki Mahinga Kai is going from strength to strength! It recently scored several new research grants to get on with its kaupapa.

It is particularly awesome that New Zealand's Foundation for Research, Science & Technology (FRST) has awarded the Cawthron Institute a putea of $100,000 per year for 3 years. They will develop a toolkit for communicating Māori knowledge in resource management decision-making processes. Cawthron's science team came in force to the TMK Forum hui at Ōnuku last October. They were the first to sign up to the TMK researcher provider 'code of ethics' and now have been granted the funding to support kaitiakitanga.

This is exactly what we hoped for – that new research providers would gain leverage by supporting *Te Tiaki Mahinga Kai*. Gillian Wratt, Chief Executive of the Cawthron Institute is delighted. She says: "Cawthron's business is to provide research based solutions to enable sustainable management coastal and freshwater systems and resources. It was critical for us to engage with TMK to get advice on how our work might best benefit Māori. The success of this FRST bid can be credited to collective effort and relationships begun through the TMK Forum". The kōrero at the Puketeraki and Ōnuku TMK Forum gatherings emphasized the link between whenua and moana and expressed the frustration in not getting Māori values properly heard and applied. Cawthron's study is designed to provide tools for ensuring that Māori values can be properly considered in RMA hearings. This will help iwi to communicate what should and shouldn't happen on the land next to taiāpure and mātaitai – it's all part of protecting the kai living in the water.



Cable Bay, near Nelson, is part of the whakapuaka Taiāpure established in 2002.

Inset: **Jim Sinner**, the leader of Cawthron's new research project to give Māori values a better hearing inthe RMA.

Another huge boost has come from Ngā Pae o Te Māramatanga. This is the Māori 'Centre for Research Excellence' based at Auckland University. They have granted $60,000 to be spent over the next two years for a scoping project to determine how to best assist communities associated with taiāpure and mātaitai to build research capacity and to support their own expression of kaitiakitanga. Dr Pip Pehi is the leader of the project. She says: "This is a great opportunity for researchers and kaitiaki to identify how researchers and communities can jointly negotiate how research will be conducted to ensure best and practical outcomes for everyone. This grant will really help us to work in a truly collaborative way". Ngā Pae o Te Māramatanga also supported a summer student Fellowship to Anne-Marie Jackson (Ngāpuhi, Ngāti Whatua) to investigate the barriers to establishing the East Otago Taiāpure.

› *did you KNOW?* The oceans produce a similar amount of oxygen as all the forests and grasslands on the planet, even though marine algae and other marine plants only make up 1% of the total plant biomass.

Ngāi Tahu have once again stepped forward to co-fund new strands of research within TMK. A large project is surveying fishing pressure on the newly formed Ākaroa Taiāpure and at the Te Whaka a Te Wera Mātaitai at Rakiura. This will give a base-line of current fishing pressure to help assess changes in future, but it also assesses the effectiveness of fishing bylaws, compliance and fishers' levels of satisfaction with the current fishing stocks. Ngāi Tahu also provided a scholarship for Hireke Phillips- Zygadlo and Emma Kallquist to do the fishing survey field work this summer. Hireke is a Ngāi Tahu student doing marine science at University of Canterbury. Emma is doing an MSc thesis at the University of Canterbury about fishing pressure on the Ākaroa Taiāpure. Her work will be featured in the next issue of *Kai Kōrero*.

We are also grateful for student summer bursaries from the University of Otago for Joanna Lander, Julian Moller and Emma Shaw. They have helped establish fishing surveys, and created literature databases. They also analysed newspaper articles about fishing and mātaitai and taiāpure – an interesting window to see what others consider to be the main political and ecological issues around proposed and established customary fishing areas.

TMK research team

Te Runanga o NGAI TAHU

FOUNDATION FOR RESEARCH SCIENCE & TECHNOLOGY
Tūāpapa Rangahau Pūtaiao

CAWTHRON

The University of Canterbury, University of Otago and Cawthron Institute would like to thank all our funders for their investments in *Te Tiaki Mahinga Kai*.

Donate please!

we need money to secure Mahinga Kai for your mokopuna

Te Tiaki Mahinga Kai has set up a **Flaxroots Foundation Trust Account** to accept donations to fund the running of the project. To donate to The Flaxroots Foundation, please make a deposit into the following bank account:

Account: 06-0901-0001203-00
Reference: Flaxroots

Make sure to include 'Flaxroots' as a reference, and your name as a another reference if possible. Also, please send an email to susan.davies@otago.ac.nz notifying us of your donation – with your name, the amount, and whether the deposit is a one-off or a regular payment. Without this email the donation can not be collected!

Alternatively, you can contact Susan Davies at CSAFE. Call (03) 479 5220.

In the near future we hope to make secure donations possible via credit card on the website.

Make *Kai Kōrero* yours!

This magazine is for you, the kaitiaki of Aotearoa. So please send us your items for publication to *Kai Kōrero* at Kā Rakahau o Te Ao Tūroa (CSAFE), 21 Montgomery Ave., Dunedin – ph (03) 479 5220 for couriers; or post to CSAFE University of Otago, PO Box 56, Dunedin. If you are just sending us text you can either fax us on (03) 479 5266 or email us at csafe@otago.ac.nz
If you have photos of mahinga kai and people harvesting, or your taonga species, send them along – we'd love to print them in *Kai Kōrero*. We will scan them and return them immediately by registered post. - Editors

Ten years along and still going strong

Nigel Scott (Te Rūnanga o Ngāi Tahu) talks about his motivation, experiences and lessons learnt while working with tāngata whenua on customary fisheries management.

Ko Aoraki toku mauka

Ko Waitaki toku awa

Ko Arai te uru toku waka

Ko Ngāi Tahu, Kāti Māmoe, Waitaha oku iwi

Ko Kāti Hāteatea, Ngāi Tūāhuriri oku hapū

Ko Moeraki te turangawaewae

Ko Uenuku te whare tūpuna

Ko Nigel Scott taku ingoa

Tihei Mauri Ora!

Nigel works for Toitū Te Whenua, the environmental unit of the Ngāi Tahu tribal council – Te Rūnanga o Ngāi Tahu. His core function is to protect and enhance the customary fishing rights of Ngāi Tahu Whānui. Here he speaks about his challenges and lessons learnt over the past ten years.

I've been working for the Ngāi Tahu tribal council for the past 10 years and I consider it a massive privilege to be able to work for my tribe. I certainly feel fortunate to have worked alongside one of my mentors, Trevor Howse, for so many years.

In fact, one of the main reasons why I've stayed in this job for so long is the whānaungatanga I have experienced around the motu with the flaxroot Ngāi Tahu I get to work with and for everyday. There are some fantastic people working at the flaxroots and they are truly inspirational. They are incredibly passionate about protecting the mahinga kai resources of Te Wai Pounamu and the customary/aboriginal and Treaty-based rights of Ngāi Tahu Whānui. Working with people that care so much about the same things you do becomes 'addictive' over time.

In particular I have discovered how important the ahi kaa are in natural resource management and how important it is that local knowledge is utilised in the management of natural resources. People and place, tāngata and

whenua has become the major focus of my work and I see myself as an advocate for the fight to ensure natural resource management is conducted at this flaxroot level.

That's why mātaitai and taiāpure have been a major component of my work in the past 10 years. Establishing mātaitai and taiāpure is one way of recognising Ngāi Tahu Whānui's customary and Treaty-based fishing rights. These mechanisms provide increased access to fisheries resources and increased input and participation in to the management of these iconic fishing grounds.

But I would say that these mechanisms still only provide a small dimension of rangatiratanga back to the hapū or marae – they are not silver bullets by any stretch of the imagination. This is an important point that many in the iwi (and in other iwi too I am sure) do not take on board – the mechanisms provided through the 1989 and 1992 fisheries settlements with the Crown (both the commercial and non-commercial components) do not and will not return 'tino rangatiratanga' to iwi or hapū, but they do provide a massive opportunity to ensure Tāngata Whenua will be intimately involved in fisheries management now and in to the future.

'Successful' customary fisheries management relies upon utilising or implementing a range of tools including appointing and supporting the work of Tāngata Tiaki/Kaitiaki, establishing and effectively managing mātaitai and taiāpure in key traditional fishing grounds and utilising the tribes' commercial fishing assets to their full potential. Success also relies upon developing strong relationships with central and local Government natural resources management entities, community-based resources management groups, environmental NGO's and of course the fishing industry, in particular your own iwi's fishing business.

Nigel Scott

lessons learnt

I've learnt a lot of lessons, good and bad, about area management tools over the last ten years, and I've been asked to share some of those with the *Te Tiaki Mahinga Kai* whānau.

Get you own whare in order

- Take the people with you! Work hard within the tribe to develop support for the customary fisheries framework to give you enough traction to get mahi done – using LAW to give effect to LORE. Without that support, even the simple task of appointing Tāngata Tiaki/Kaitiaki will prove to be very difficult.

  Ngāi Tahu sold the regulations to our own people via a contract of service we conducted for MFish. It was great to work with the customary fisheries team (such as uncle Kelly Davis) over those years and the work of this team was crucial to our people understanding and accepting the regulations. If the flaxroot people of your tribe do not understand that they have no choice but to pick these regulations up and make them work then you'll go nowhere!

- Be holistic – Ki uta ki tai! Developing an iwi management plan setting out your views on the management of <u>all</u> the natural resources of your rohe/takiwā will provide a stable platform for advocacy on customary fisheries matters.
- Appoint knowledgeable and effective Tāngata Tiaki/Kaitiaki – without experienced managers you can not hope to manage mātaitai/taiāpure effectively.
- PLANNING is absolutely crucial! Especially if you want to establish a number of mātaitai/taiāpure, you must focus on the cumulative effects and plan and co-ordinate their establishment. Effective planning should ensure that you maximise the effectiveness of mātaitai/taiāpure both individually (the mātaitai/taiāpure is of a size/shape that will actually protect the customary fisheries in question) and collectively (creating a network to ensure that all hapū in your tribal area receive some form of protec-

tion if they choose to be involved, that there is a spread of protection over fisheries from the mountains to the sea and that only traditional fishing grounds with contemporary significance are protected).

- When drafting mātaitai/taiāpure applications, keep it simple! Stick to the required information and remember you don't have to justify your whakapapa to MFish so don't go into too much detail there – it's the fishing/fisheries significance that MFish is interested in. Also a mātaitai or taiāpure application shouldn't be used to try and establish manawhenua, manamoana.
- Get your commercial/ non-commercial relationships sorted internally within your iwi. It should be clear who is tuakana and who is teina. The last thing that is needed is for the commercial fishing arm of the iwi to be publicly submitting against the work of a marae/hapū of that tribe. That would be an absolute disaster and an embarrassment for all concerned. Of course to assist matters, mātaitai/taiāpure applications should be realistic (ie. they have a good chance of meeting the legislative tests for their establishment) and considerate of the commercial fishing interests of the tribe.

Communicate your intentions

- Inform key people and fishing stakeholders in your community of your intention to apply for a mātaitai/taiāpure (develop a communication strategy, even if it's only a 1-pager, that identifies who you need to talk with, what methods should be employed and who needs to carry out that work).

You're now ready to run the gauntlet of the mātaitai/taiāpure application process!

Keep the acid on MFish to process the applications

- Thanks to two moratoria that MFish put in place to develop their policies and procedures relating to the assessment of the effects of mātaitai applications on other fishers, several Ngāi Tahu applications have experienced significant delays in processing – we've lost many years of progress as a consequence.
- Of course MFish's policies and procedures should have been in place in 1998 before the South Island and North Island regulations were brought into being, however, the paperwork is now done and MFish have no more excuses for delaying the processing of applications – but keep the pressure on! It seems all too easy for MFish to divert resources to Marine Reserve concurrence work so we need to keep them focused.

Keep cool!

- Remember that during the formal consultation process on your mātaitai/taiāpure it is likely that you will confront the worst redneck elements of New Zealand society. I've certainly been through some interesting public meetings and seen what happens when good consultation goes bad. Remember the bigger picture and don't respond to racist cheap shots. These matters are not something the Minister can take into account when assessing the application anyway, so just let this trash talk wash over you.

Be flexible!

- Be willing to amend your mātaitai/taiāpure application if you receive information that shows you may indeed have an undue adverse effect on local fishers.

Nurture key relationships!

- Maintain or create relationships with central and local government natural resources management entities and research providers and don't be afraid to use their resources. The Pou Takawaenga team within MFish for example should be utilised as much as possible.

Advocate to improve the system

- Advocate for a review of the taiāpure establishment provisions of the Fisheries Act. Currently they are an absolute dog's breakfast. The fastest

› *did you KNOW?* The oceans have absorbed around half of carbon dioxide produced by the burning of fossil fuels since the industrial revolution. So we need to keep marine ecosystems healthy to help beat climate change.

establishment of a Ngāi Tahu Taiāpure application took seven years. The Māori Land Court definitely needs to be removed from the process – they do not have the capacity to deal with these applications and the experience of supporting the Akaroa Taiāpure application showed me that they certainly do not have the expertise to deal with the fisheries-based issues that are raised during the consultation process.

- Advocate and lobby for capacity building funding – for management, monitoring and research within mātaitai/taiāpure. These tools have the potential to be magnificent but they need to be resourced effectively to reach that potential.

Kia ora koutou katoa!

Nigel Scott

For further information please contact Nigel Scott, Toitū Te Whenua on (03) 366 4344 or via email at Nigel.Scott@ngaitahu.iwi.nz

Ka ora te whenua, KA ORA TE TĀNGATA Well-being of the people and the land

Māori culture shows through whakatauki such as these the deep connection that Māori people have to their land. This strong connection to the land is something however that many non-Māori New Zealanders share also. *Ka ora te whenua, ka ora te tāngata* is the name given to the research program that is part of the wider *Te Tiaki Mahinga Kai* project.

Ka ora te whenua, ka ora te tāngata is concerned mainly with the social and cultural aspects of the practices linked with mahinga kai, and specifically with mātaitai and taiāpure. This program aims to listen to the voices of tāngata whenua and their communities within Aotearoa about the stories that connect us to the land. Furthermore, this research hopes to share these stories to demonstrate how the health of our whenua is essential to the health of our people, and vice versa. This project aims to also develop a measure of well-being that will be directly applicable to the place in which people live.

Toi te kupu, toi te mana, toi te whenua

Without the language, without prestige, without land, Māoritanga will cease to exist

Te toto o te tāngata, he kai; te oranga o te tāngata, he whenua

Food supplies the blood of the people, their welfare depends on the land

A Participatory Action Research approach will be used to work with tāngata tiaki and community members from up to 6 case studies to investigate whether cultural and environmental well-being is increased through the successful establishment and management of mātaitai and taiāpure. This approach emphasises the need for participants to be involved at all stages of research, from the planning of the research project through to the collection, analysing and storage of data and then sharing the findings.

This research aims to share the stories of the research participants' relationship (and that of their communities) with their whenua (land) and how these relationships link to their overall well-being. The project will explore the role that whenua plays in the lives of tāngata whenua and the need for Māori and communities to have governance of their own lands to contribute to their overall well-being. At the end of the day, this research hopes first and foremost to foster and develop research capacity and awareness within communities and to enhance the health of all its participants.

We hope you will be interested in taking part and welcome any and all ideas, comments or feedback that you may wish to share with us. Please do not hesitate to contact Dr Pip Pehi at phillipa.pehi@otago.ac.nz for further or information, or visit www.mahingakai.org.nz

PP

Re-opening of scallop fishery concerns locals

Te Whaka ā Te Wera Mātaitai's kaitiaki are disappointed by the Ministry of Fisheries recent decision to re-open the scallop fishery in Big Glory Bay, Rakiura (Stewart Island). Big Glory Bay is just next to our mātaitai and anyone fishing there would need to hold the scallops in their possession as they travel over our reserve to get home. That will make it very difficult to police our prohibition of taking scallops from our mātaitai because anyone found with scallops on board can simply claim they got them from Big Glory Bay earlier in their trip. More importantly, our Tāngata Kaitiaki and Stewart Island locals are well aware that the number of scallops in Big Glory Bay are seriously depleted and believe that any harvest there will be unsustainable.

We provided this information to the Ministry of Fisheries in July 2007, and then followed with a letter in August 2007. The Ministry nevertheless over-ruled our request and lifted the Big Glory Bay scallop ban in October.

There is a basic respect issue here of government over-riding local knowledge and wishes without detailed consultation before the regulations were changed. Eventually we received an explanation from the Minister on 7 January 2008 which just raises other concerns. Firstly, the Minister argued that sustainability risk is low because Te Whaka ā Te Wera Mātaitai and Te Wharawhara Marine Reserve contain most of the scallop stocks in the general area and will maintain bans on harvest. This seems to us to be a completely separate issue from whether or not harvest will be sustainable in Big Glory Bay itself. Secondly the Minister states that low levels of fishing activity are anticipated in Big Glory Bay because of the small resource present there. But risk of sustainability is set by the percent of the scallops taken, not just the number present. In fact our very point to the Minister was that stocks are too low to sustain even a small amount of fishing. Harvest bans are mainly to allow restoration of depleted stock, so using the Minister's logic, why bother ever imposing a ban anywhere if we can assume that lowered stock levels will automatically cause fewer people to take the ones left? Thirdly The Minister reckoned that it is unlikely that people will be able to frequently dive for scallops in the mātaitai reserve without becoming known to our community. We agree that our local eyes protect our local area – this is one of the best features of having our own mātaitai – but we can't be everywhere all the time and the problem is often proving it when people cheat. So we don't want the Ministry making our job of pinning the evidence on the poachers to be any harder.

We do not wish to be disrespectful to the Minister or his Ministry – they have a big job to do and do not have enough resources to adequately support customary and recreational fishing. However we hope that in future they will listen and engage more with locals before making up their minds. After all, we are all working for the same sustainability goals.

Phillip Smith
Chairperson, Te Whaka a Te Wera Mātaitai Committee

We provided the Ministry of Fisheries with relevant information in July 2007 as to why scallop harvesting should not proceed in Big Glory Bay, and followed up with a letter in August. It is most disheartening to finally receive an explanation from the Minister dated 7th January 2008 … almost 6 months later. Too little, too late! The season opened in October 2007. It is to be hoped that the Ministry of Fisheries will in future take note of our concerns.

Te Whaka ā Te Wera Mātaitai is dear to our hearts. This project has not been taken lightly by any of our Tāngata Kaitiaki Tiaki and committee members. They individually have a wealth of knowledge about the mātaitai and know it like the palm of their hands. For some this was their childhood playground and virtually everyone has information to pass on. Collectively the information is priceless.

Maureen Jones
Tāngata Kaitiaki Tiaki, Rakiura

› *did you KNOW?* Ocean acidification is accelerating because of climate change and may dissolve animals and plants with a calcium carbonate skeleton – critters like corals, pāua, kina, toheroa and all the other shellfish!

OPINION

Paul Borell

'Let's do it right!'

I don't like to dwell on the negative things in life. I like to see us focus on the huge potential *Te Tiaki Mahinga Kai* has – on the opportunities that have already arisen and the ones that will come up – even when the going is bound to get tough and we are struggling to get started. TMK has a lot to offer for everyone involved. For iwi, hapū and kaitiaki the greatest gain will be the growth in knowledge and tools to help us manage our kai species and harvesting. We could become world leaders in customary fishing management – the potential is there –I believe TMK can be a perfect model, if only we can do it right. Nobody has done it right yet. The Ministry of Fisheries have not adequately protected the moana and kai – and now it's up to us to do better. I would hate to hear anybody say we didn't do it right. To me it feels our success is impeded by the lack of resources to successfully manage our rohe moana, our mātaitai, taiāpure and 186 closures. Nothing would have been achieved at all, if it wasn't for the voluntary work of the committee members and Penetaka Dickson and his team at the rūnanga o Ngāi Terangi. Ngā mihi nui ki a ratau. I feel the ministry of fisheries should have the faith in our ability to get it right and give us the customary putea for us to develop our sustainable management practices for the future . Tautoko Kaimoana Ma Ngā Iwi Katoa.

But money would only get us so far. Everyone has to learn a simple rule to start achieving our goals is Kotahitanga. That's where I can see that research can assist – our researchers can collect and compile information to put it in a way that it can be used simply and understandable for others. They can also write it down, which is important because it can't be retained and passed on be one person. Otherwise all the information will be lost when that person goes.

Knowledge is useless if it can't be used. Some of it is specific to certain areas, but some might work elsewhere. If TMK puts it all together to show everyone a bigger

Paul was raised in Hamilton and spent his secondary schooling at Hato Tipene near Auckland. Returning to holiday with whānau in Tauranga Moana his passion for the sea and the uri of Tangaroa developed from an early age. Gathering kaimoana with his parents, uncles and aunties was a whānau affair and usually involved whānau events at marae or other venues. It is these such customary practices that he hopes will become sustainable for our future generations through our combined efforts. Paul lives in Matapihi amongst his hapū of Ngāi Tukairangi and is one of two kaitiaki for his marae HungaHungaToroa. The other kaitiaki Hayden Henery is also devoted to the management of our environment. Paul also represents his iwi Ngāi Terangi on the Tauranga Moana Iwi Customary Fisheries Committee. His Whakapapa is also Ngāti Ranginui, Tainui and TeRarawa. His mahi as a building contractor can be very demanding but he strives to ensure a sustainable future for our people by helping as a member of *Te Tiaki Mahinga Kai*'s Forum and the Tauranga Moana Iwi Customary Fisheries Committee. Here he has this to say on the opportunities and challenges that lay ahead for *Te Tiaki Mahinga Kai*. His vision is for us to get it right.

Whakatauki

Kia mate ururoa, kei mate wheke.
Fight like a shark, don't give in like an octopus.

picture we'll get more national action. Our tikanga can be shared too – its all part and parcel of what we do. Templates, such as management plans can be passed around and then adapted and changed for new groups to fit to their own place. Things will move much quicker for everyone then, but especially for those just starting down the path to get their mātaitai or taiāpure. We need to consider everyone's opinion as we go forward. By being involved in TMK, I'll get the chance to see things through the eyes of others and take in the combination of things back to my people. The wānanga we plan will allow others to do the same.

One of our biggest obstacles I see in this very new project is the fear of no gain. Lots of people keep asking "what's in it for us?". It would be much better if everyone asks "What can I put in – what can I contribute?". We all want to go to the same place together. By contributing a little bit each, we will gain a lot. We need to learn and share so we avoid repeating mistakes and re-inventing the wheel. We will get there much faster if we all row our waka together.

The best way to make people understand the potential gain is by getting on with the job. Talk is cheap, but if we are actually doing it, people will see we start achieving things. Achievement will add momentum and people will learn new things.

Success is, when we know exactly how we best achieved kaimoana restoration and can tell that to the new iwi, hapū and Māori groups that we welcome on board. I also envision the enhancement of our kaimoana by traditional or modern methods to enhance our stocks. Let's monitor our own stocks by training marae-based divers. They can be our eyes and ears, so they should be trained to report back valuable data to help us manage our area.

To achieve our main goal – sustainability of our kaimoana – everyone who joins TMK needs to help us get our vision right and then we need to stick to it – let's all jump in that boat and row as quickly and fast as possible into the same direction. No wavering. Remember the whakatauki: *"The rope that holds the waka can be broken, but the rope that holds us people together can never be broken"*. I think the rope here is our need for sustainability of our kaimoana throughout the motu – that's the rope that will bind us all together!

Paul Borell
Tauranga Moana Iwi Customary Fisheries Committee Member

Thanks to University of Otago and Dunedin City Council!

Te Tiaki Mahinga Kai has had tremendous support from the University of Otago from the outset. The University Division of Sciences provided a generous putea to allow the research teams to meet with kaitiaki and the projects steering committee in 2006 and 2007 before the FRST grant kicked in. And the University's Ecology, Evolution and Behaviour Research Group provided funding for Emma Shaw's Vacation bursary over this past summer (for website development and fish surveys); the Zoology Department funded a vacation bursary for Ani Kainamu to help develop teaching resources around taonga species; and the Division of Humanities funded Joanne Lander's vacation bursary to help edit the first edition of *Kai Kōrero* and analyze newspaper articles about mahinga kai.

We have also had wonderful support from the Dunedin City Council's "Research Support Fund". This partly-funded the establishment of the iwi partnerships that were fundamentally important to landing the FRST grant that finally got us under way. The DCC grant also allowed us to secure two grants from the Ministry of Fisheries to support pāua and toheroa restoration.

Thanks from the TMK Forum!

DUNEDIN CITY COUNCIL
Kaunihera-a-rohe o Otepoti

UNIVERSITY of OTAGO
SAPERE AUDE
Te Whare Wānanga o Otāgo
NEW ZEALAND

› did you KNOW? Half the oxygen you breathe comes from the sea.

profile Pip Pehi

Tena koutou katoa! Ko Whakatere te maunga, ko Waima te awa, ko Hokianga te moana, ko Ngāpuhi te iwi, ko Māhurehure te hapū. Ko Barry raua ko Jenny Pehi oku mātua. Ko Pip Pehi ahau.

I am based in Dunedin and I am employed through a FRST post-doctoral fellowship, which is contracted through Kā Rakahau o te Ao Tūroa (CSAFE) and the TMK project. The research project I am co-ordinating presently is *Ka ora te whenua, ka ora te tāngata* and is broadly aimed at investigating the cultural and social well-being aspects of the overall TMK project.

I was born in Lower Hutt and moved to Taupo when I was 6. I grew up in Taupo, with that beautiful lake and mountains always there, and my fondest memories as a child were spent in nature with my whānau, whether it was in my mother's garden, gathering firewood, tramping or camping. Along with exploring most of the North Island, we travelled twice to Te Wai Pounamu on our summer school holidays and travelled all around, camping where we found ourselves. While I have never really been a fan of fishing (geez, am I allowed to say that!!) my family are avid fans and we have always gathered kaimoana .

Pip Pehi with her daughter Maia, and Katja Schweikert's son Tamatea, on Rakiura recently. Pip and Katja have been working with the Rakiura community in support of Te Whaka a te Wera Mātaitai.

I have observed many things within our health systems that I do not believe foster our well-being and I very much want to be part of something that can change some of those things.

I moved to Dunedin to study at Otago in 1993 and simply haven't left! One of the key reasons was that I met a local boy, fell in love and had a baby. And even though that hasn't worked out, I find myself very attached to Dunedin now and live out at Ocean View and find myself gardening and gathering kaimoana (even fishing!). These activities have become essential ingredients for my well-being. I also have bones in the earth here with my Pākehā ancestors being some of the first settlers here and the Catlins just down the line is one of my favourite places on the planet.

I am a qualified and registered clinical psychologist and have worked as a therapist in many different areas for almost nine years before I joined the TMK project. I also have a doctorate in social psychology. The main reason I went back to research was that I felt this is the place where I can optimally use the gifts, skills and abilities that I have been lucky enough to have the opportunities to develop and learn, to better assist in increasing the well-being of our people and our planet. I have observed many things within our health systems that I do not believe foster our well-being and I very much want to be part of something that can change some of those things.

As I said earlier, the gratitude I feel daily is overwhelming. Through the research I am doing, I have the chance to travel all around the country to the most beautiful places, meeting beautiful and interesting people doing work I am passionate and excited about! I believe the key to looking after ourselves and our whenua lies in us remaining connected to each other, to our environment and through these connections staying connected to something greater than ourselves. I want to know what you think about that though and am keen to meet you!

No reira, tena koutou, tena koutou, tena koutou katoa!!

TMK gets a lot of its energy from the following younger team members

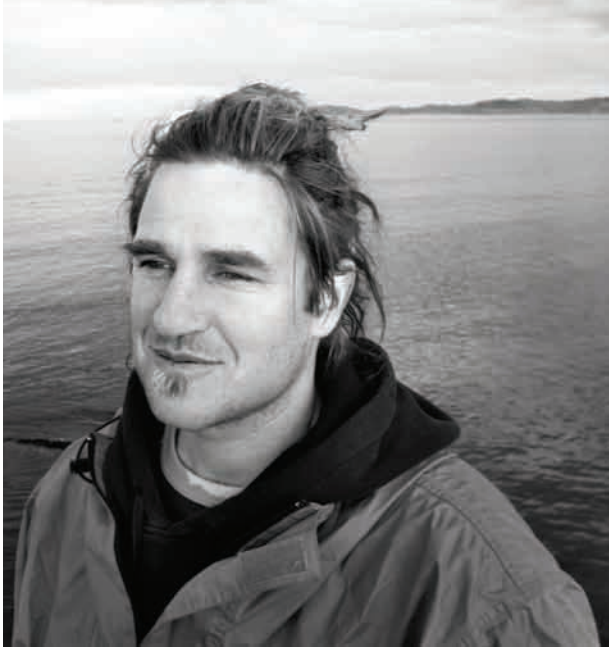
Rogues gallery

Anne-Marie Jackson reports on our growing staff

Dr Chris Hepburn is a Research Fellow at the Department of Marine Science funded by a FRST postdoctoral Fellowship. He just completed three years of research within the East Otago Taiāpure and has published research on the productivity of kelp in Te Whaka a te Wera (Paterson Inlet, Rakiura/Stewart Island). FRST's Te Tipu o te Wānanga programme has funded his three-year research project on local variation in kelp/pāua/kina communities and the impact of this variation on harvesting bylaws. So far he is working mainly with the kaitiaki of the East Otago Taiāpure, Koukourarata Mātaitai, Te Whaka a te Wera Mātaitai, but discussions are also beginning with the directors of the new mātaitai at Kaka Point in the Catlins.

opposite page: Dr Phillipa Pehi (Ngāpuhi) is a postdoctoral Research Fellow at CSAFE working full-time on Te *Te Tiaki Mahinga Kai*, funded by a FRST postdoctoral Fellowship. She has a PhD in psychology and experience in social and clinical psychology. Her current research is on Social and Cultural Well-being of people in relation to Mahinga Kai.

Katja Schweikert is an Assistant Research Fellow at CSAFE working full-time on Te *Te Tiaki Mahinga Kai*, funded by a FRST Bridge-to-Employment grant. She has just completed her PhD in marine botany (on Karengo) and also teaches special education programs at the Portobello Marine Studies Centre (Aquarium) . Within TMK she is mainly working on development of the Marine Health Index for Ngāi Tahu, under the guidance of East Otago Taiāpure, Te Whaka a Te Wera Mātaitai. This project will soon broaden to include other mātaitai and taiāpure. Katja also guides the 'Toheroa mātauranga and management in Murihiku' project hosted by the Ōraka-Aparima Rūnaka.



Derek Richards started a Masters in Marine Science in late 2007, funded by a FRST Masters Fellowship. His thesis topic is "Environmental Influences on Rocky Reef Habitat, Kelp Forest Productivity and Pāua/ Kina Populations". His work will be in collaboration with Chris Hepburn and thereby help identify key nursery areas of high productivity in the East Otago Taiāpure. Another important aspect to his research is measuring the effect of *Undaria*, and invading seaweed, on marine ecosystem productivity – that's all part of figuring out how much effort should be spent in trying to control it.

Ani Kainamu, (Ngāpuhi) is starting a Masters in Marine Science in 2009, funded by FRST Masters Fellowship. Her thesis topic will be "*Te Oranga Pai o Ngā Tuangi mo te Uri Whakaheke*: The future sustainability of cockle populations". Over the past summer she has worked as a summer student for the Department of Zoology. Her thesis work will support the East Otago Taiāpure community in managing tuangi, and the Otakou Rūnaka in assessing commercial harvest impacts on their proposed mātaitai in and around Otago Harbour.

Dr Simon Lambert (Ngāti Ruapani, Tuhoe) is a researcher at Manaaki Whenua (Landcare Trust), funded by a FRST Bridge-to-Employment grant. He has just finished his PhD on 'The Expansion of Sustainability through New Economic Space: Māori Potatoes and Cultural Resilience'. Simon assisted TMK by helping develop the Marine Health Index. He was recently awarded a Postdoctoral fellowship at Lincoln University, so he will soon leave TMK. Thanks Simon.

PROTECTING OUR MAHINGA KAI

How genetics research can help in managing mātaitai, taiāpure, and rāhui

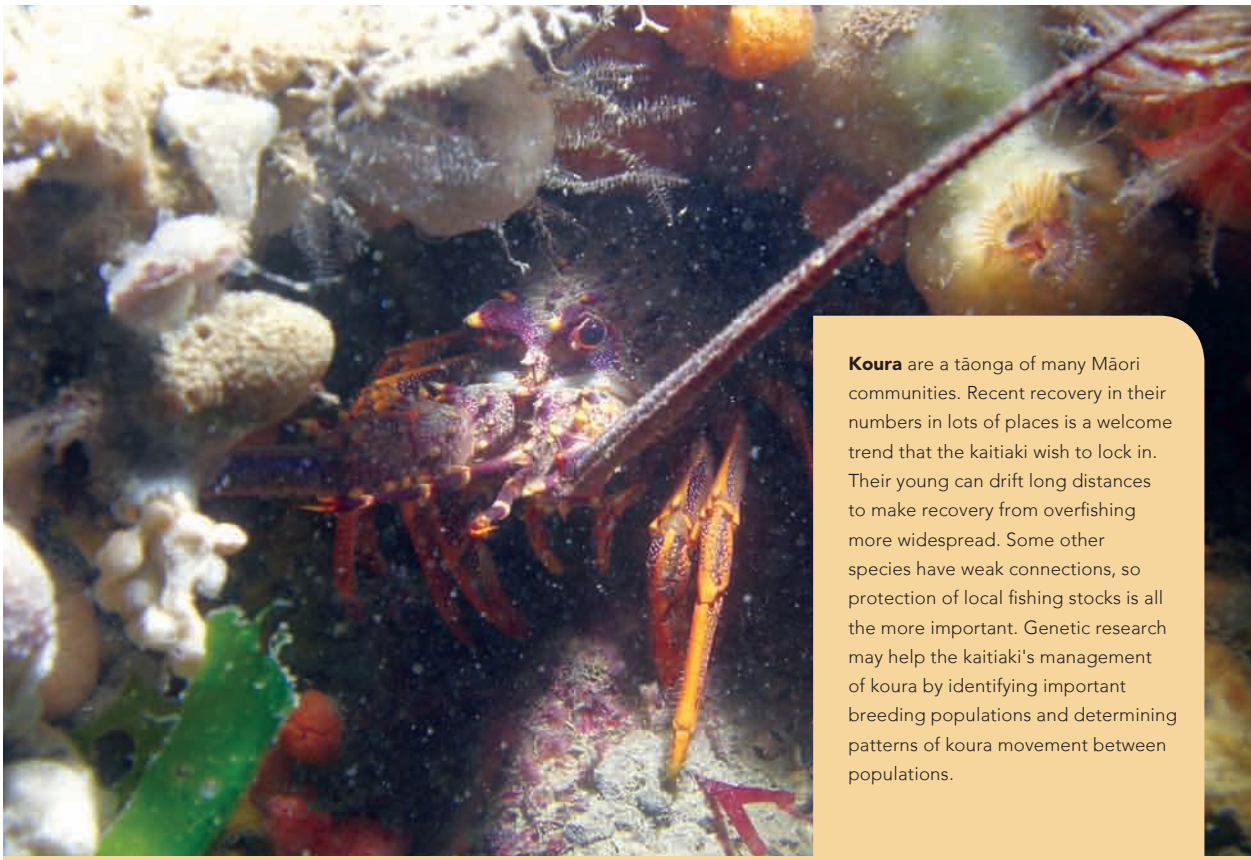
TMK's latest collaborators are the Allan Wilson Centre (AWC) and the Centre for Marine Environmental and Economic Research (CMEER). Their geneticists want to get stuck in to help mahinga kai management. The Allan Wilson Centre is a Centre of Research Excellence, like Ngā Pae o te Māramatanga. CMEER is based at Victoria University of Wellington. In this article they explain how genetics can partner mātauranga to make a real difference.

All living beings have DNA – a code that determines how individuals develop. Because this code is passed from one generation to the next, DNA carries a record of how individuals, populations, and species are related to one another. This makes DNA an invaluable archive that contains information on how species have changed over the years and can help in managing and conserving species. The Centre for Marine Environmental and Economic Research (CMEER) and the Allan Wilson Centre for Molecular Ecology and Evolution (AWC), have expertise in genetics and have signed on to support *Te Tiaki Mahinga Kai*. Genetic techniques can help answer questions that are important for management of mātaitai, taiāpure, and S186 temporary closures.

Whakapapa: How are populations connected?

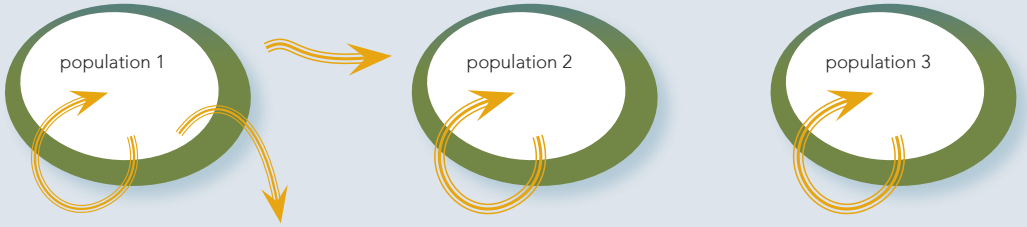
Genetics can help us measure how populations within and among mātaitai and taiāpure are connected to one another. When individuals from one area move and mate with individuals in another, we say the two populations are "connected". Without these connections, populations are isolated and must be self-sustaining to persist.

In some species, such as kūtai (greenshell mussels) and koura (red rock lobster), populations are broadly connected because the young can drift hundreds of kilometres on currents from where they are born (see Population 1 in the diagram over page) to another population where they mate (Population 2). In other species, individuals do not drift or migrate far from where they are born and are somewhat specific to an



Koura are a tāonga of many Māori communities. Recent recovery in their numbers in lots of places is a welcome trend that the kaitiaki wish to lock in. Their young can drift long distances to make recovery from overfishing more widespread. Some other species have weak connections, so protection of local fishing stocks is all the more important. Genetic research may help the kaitiaki's management of koura by identifying important breeding populations and determining patterns of koura movement between populations.

Three populations (green circles) and the ways individuals may move among them (yellow arrows). The same scenarios could apply to mātaitai and taiāpure areas.



Some individuals from population 1 are being 'lost' to other populations

Some individuals from population 2 are coming in from elsewhere

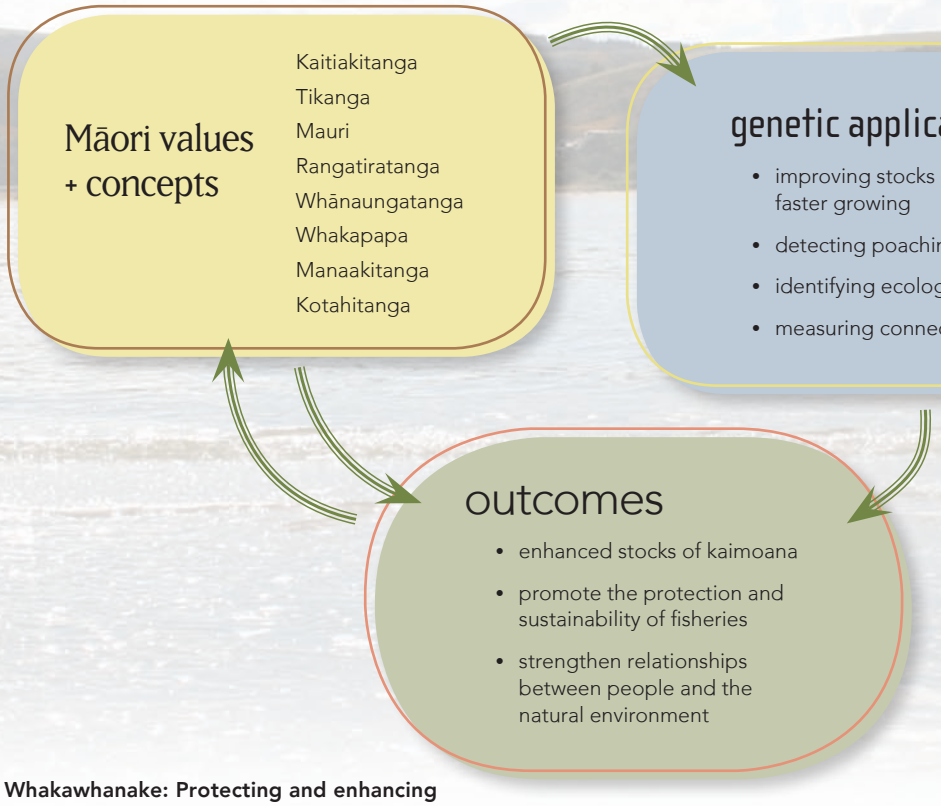
Most or all of the individuals from population 3 are staying in population 3

area (Population 3). This can be due to salinity or temperature variations, or current barriers. In this case, multiple populations may live in a very small area but still be isolated from one another. If these populations are reduced in size, they are unlikely to be rescued by individuals moving in from other populations, even if they have close neighbours. For example, some types of intertidal limpets rarely move between populations separated by less than 1 km in the Kermadecs. Often genetic techniques are the only way to test levels of connectivity.

How are populations shaped by their environment?

Over many generations, populations can change genetically in response to harvest, disease, and the presence of contaminants. Populations may even adapt to cope with these stresses in a way that is specific to their home location. For example, blue mussels in the Hutt River mouth near Wellington Harbour carry genes which help them tolerate changes in salinity. Mussels that do not have these genes tend to die within the first 4-8 weeks of life. Populations that are adapted to specific conditions are difficult to replace and may require special protection. Geneticists can look at genes with specific functions to help determine if populations are locally adapted and if they may have changed over time in response to local stresses.

Populations that are adapted to specific conditions are difficult to replace and may require special protection.



Whakawhanake: Protecting and enhancing our kaimoana

Genetic techniques have also proven useful in forensic applications – think of a sort of CSI for seafood! Small samples of tissue taken from illegally harvested fish or shellfish can be used to determine which species was harvested, and sometimes also provide clues to the location of harvest. This could help determine if a catch came from a species or location under a rāhui.

Beyond protecting kaimoana, genetics may help Kaitiaki enhance the number and quality of kaimoana within mātaitai and taiāpure. For example, species that have disappeared from an area could be reintroduced, and species with few individuals remaining could be cultured to boost their numbers. But when a population is lost, how do you choose another to replace it? And when a population is dwindling, how can you increase numbers of individuals without losing important genetic diversity? Genetic techniques can help Kaitiaki select the most appropriate populations for reintroductions and breeding schemes for aquaculture enhancement.

These questions are just part of the broader challenge of understanding how populations of kaimoana are linked and how they are responding to environmental pressures. Genetics research will only make sense within the context of a broader understanding of the ecology, history, and cultural significance of mātaitai and taiāpure areas.

The Allan Wilson Centre has researchers at five universities throughout Aotearoa that work on diverse studies of evolution, biodiversity, and anthropology. Much of this work is conducted in collaboration with Māori and Pacific Island communities.
The Centre for Marine Environmental and Economic Research has expertise in the ecology of marine protected areas including effectiveness assessments, monitoring, baseline surveys, economics and habitat mapping. Dr. Kristina Ramstad and Dr. Adele Whyte (Ngāti Kahungunu) are the principal contacts for these research groups. They invite you to contact them with questions you may have about genetic research and will also attend hui as members of our Technical Advisory Board.

Kristina.Ramstad@vuw.ac.nz (04) 463 7443
Adele.Whyte@vuw.ac.nz (04) 463 5233 extension 8051

› *did you KNOW?* The deepest marine algae found so far are 268m below sea level, perched on a seamount in the Bahamas. The amount of light at that depth is similar to the light from the full moon on a clear night.

Kanakana

tāonga from awa and moana

Kanakana, which you might know as piharau, korokoro, or in English, lamprey, are a main reason for the establishment of a 10 km-long mātaitai around Mataura township in Murihiku (Southland). This is New Zealand's first freshwater mātaitai – hopefully a forerunner of several more coming along rivers, lakes and wetlands. Here **Joanne Lander**, a student in *Te Tiaki Mahinga Kai*, takes a look at the history of kanakana harvesting and describes what little is known about its life cycle.

Kanakana look similar to tuna (freshwater eels) except that kanakana do not have a backbone, have a circular sucker instead of a mouth, and have a row of seven holes (gills) starting from behind their head, running along their sides.

Like freshwater eels, kanakana were valuable kai for the tūpuna. In south Otago and Southland, kanakana have been almost as important as eels. Important kanakana fisheries were at Mataura, Clutha, the upper Taieri, Catlins River, Waikawa, Silverstream, and Pomahaka. Large-scale kanakana fishing in the Mataura River had to stop in 1900 because dredging created a build-up of silt in the river, limiting the migration and disturbing the

Above

'Though kanakana do not have backbones, they do have a rod of bendy tissue that runs down their back. Kanakana can grow to 50 to 60 centimetres long.'

The scientific name for kanakana is *Geotria australis*. In this simulated image you can see the seven gill holes down the side of the kanakana, behind its eye.

Gordon, Dennis and Maggy Wassilieff. 'Marine animals without backbones', Te Ara - the Encyclopedia of New Zealand www.teara.govt.nz updated 21-Sep-2007

Right

Utu piharau (pā kanakana) at Pungarehu on the Whanganui River, sometime in the 1890s. The level of the river would rise from rainfall in winter, so utu piharau were built in March while the river was still low.

Photograph by William James Harding (1826-1899). From the W J Harding Collection. Permission from the Alexander Turnbull Library Pictorial Collection.

habitat of kanakana. Today the Department of Conservation has kanakana listed as a threatened species, largely because of such habitat disruption and damage.

Life of Kanakana

Kanakana are born in rivers where they live for four years as filter-feeders. They then migrate to the ocean and live off the blood of marine mammals and fish, using sharp teeth to penetrate tough skin (similar to leeches).

After a few years in the sea, kanakana travel back up into the rivers to spawn. The saying goes, "Ka kitea a Matariki, ka rere te korokoro" (when Matariki is seen, the lamprey migrate). Matariki (the Pleiades constellation) can be seen around June in the early morning sky before the sun rises. This marks the Māori New Year and when kanakana begin migrating upstream.

Pā Kanakana

Tūpuna fishing in Aotearoa used very clever utu piharau or pā kanakana (weir systems) to catch kanakana. This was usually during one season of the year (beginning in June in the North Island, but August in the far south), unlike eels which can be caught most of the year-round. Fences were built across the river using strong stakes and brush with a gap in the centre of the fence in the middle of the river. Kanakana would swim upstream against the current. They would swim along the fence towards the centre of the river looking for the opening in the fence and would be pushed back into a waiting net and hīnaki (basket trap) by the stronger current in the middle of the river. Hīnaki were built so that kanakana could get in but not out again, sometimes using sharp sticks pointing into the centre of the hīnaki (see the previous issue of *Kai Kōrero* for information about eel hīnaki). Kanakana are generally slightly smaller than freshwater eels. Both can be caught using hīnaki, but the hīnaki for kanakana can be smaller.

There's More than One Way to Catch a Kanakana

Another way of catching kanakana has been used in south Otago and Southland, in the Mataura River for example. There, kanakana would migrate in late winter

to spring (August and September). Kanakana would be vulnerable when working their way up falls or rapids in places such as Mataura. Kanakana can climb up falls as some hold onto rock faces with their sucker mouths. Many kanakana could cover a whole rock face and then other kanakana can slither up amongst them and reach the top of the falls! Kanakana could just be knocked off these falls, sometimes using branches, and scooped out of the awa or pulled off rocks.

Pepehi can also be used to catch kanakana. This is when bundles of fern are placed in the sides of rivers. Kanakana weave themselves into the ferns, then people could simply lift out the ferns and the kanakana with them.

Another type of weir used is called the whakaparu piharau. This one is made using stones and lined with ferns and grass. A whakapua (mat) made of bracken would be pegged to the river bed. When enough kanakana were caught in the whakaparu piharau, the mat could be rolled up and lifted out with the kanakana inside.

Like eels, kanakana could be eaten fresh or preserved for a later time by smoking and curing.

Joanne Lander

Joanne is an Masters student at the University of Otago. She joined *Te Tiaki Mahinga Kai* as a summer vacation bursar, funded by the University's Division of Humanities. If you want to join the researchers for work experience, contact us at mahingakai@otago.ac.nz

Waka Mokihi for Kanakana

Around Kaitāngata, south-east of Balclutha, there were so many kanakana that catches could not fit in the waka and had to be floated back to shore on waka mokihi (mogi/rafts)! Today there would be fewer kanakana because they are a threatened species due to sediments and barriers in rivers.

Source: Anderson, Atholl (1998). The Welcome of Strangers: an Ethnohistory of Southern Māori A. D. 1650-1850. Department of Conservation. "Freshwater Fish: Lamprey" Retrieved 26/11, 2007, from www.doc.govt.nz

Kanakana by the Sackful

Herries Beattie, a researcher from Otago Museum early last century describes how a couple of guys at Mataura Falls could fill nine sacks with kanakana in one night. They would use a torch to see and wrenched handfuls of kanakana off the rocks where the kanakana had been latched on with their sucker mouths.

Beattie, James Herries (1994). Traditional Lifeways of the Southern Māori: The Otago University Museum Ethnological Project, 1920. Edited by Atholl Anderson.

One of the world's longest diets?

Once kanakana have returned to the awa from the moana, they lurk along the sides of the river for around 15 months without eating anything! They then breed and die, leaving their offspring to start the migration cycle again.

Gordon, Dennis and Maggy Wassilieff. 'Marine animals without backbones', Te Ara - the Encyclopedia of New Zealand www.teara.govt.nz updated 21-Sep-2007

Sources

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Beattie, James Herries (1994). Traditional Lifeways of the Southern Māori: The Otago University Museum Ethnological Project, 1920. Edited by Atholl Anderson.

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Available from: www.teara.govt.nz Updated: 21/09/2007
Accessed: 19/11/2007

NIWA Website. (2007). "Lamprey (Geotria australis)." Retrieved 28/11, 2007, from www.niwa.cri.nz/rc/freshwater/fishatlas/species/lamprey

4 January 2008
Kia ora and happy new year.

The Maketu Taiāpure has recently received your *Kai Kōrero* publication and congratulate you on bringing together the groups involved in customary fisheries. I did try to get Te Ohu Kaimoana to do this years ago but they were concentrating on commercial fisheries and it did not happen. I will table the MoU and other information about *Te Tiaki Mahinga Kai* at our next taiāpure committee of management meeting in February. I notice on the website that a login and password is required. How can I set this up for our taiāpure?

Ngā mihi o te ra
Elaine Tapsell

We are delighted that the Maketu committee are potentially interested in joining *Te Tiaki Mahinga Kai*. The whole idea is to support all of Aotearoa's mātaitai, taiāpure, temporary closure and rāhui management groups to maximise national benefit. The research team has not yet been able to get round to visit all the existing management groups, but will do their best to meet the kaitiaki as soon as resources allow and if invited by the locals. In the meantime kaitiaki can download a Powerpoint presentation from www.mahingakai.org.nz/about-us/joining-tmk to assess the issues, and the project protocol to figure out if the kaupapa fits their needs – or just give us a ring. Elaine asked about website membership for their taiāpure team. Just send us the names, postal addresses, email addresses (if available) and any contact details (phone or fax numbers) for all the members on your management group, kaumātua, Tāngata Tiaki or other interested individuals and we'll enrol them on the website and to receive *Kai Kōrero* and *Whiriwhiri Whakaaro* alerts. We would prefer several individual contacts to a single group one if possible. - Research Team

Kia ora Henrik,

I was stoked to receive the first issue of the *Kai Kōrero* magazine. What a beauty! The format of the mag is great too, much more pocket-sized than *Tītī Times*. It's a great way to hear about what is going on in terms of developing sustainable fisheries management approaches across the Tasman.

Anyways, more interesting to you might be this: Even though on a much smaller scale, but in a similar bottom-up fashion there are some environmental conservation initiatives evolving in the back of my woods, or shall I rather say in the front of my shores ... here on the Mid-North Coast of New South Wales in Australia. The Garby Elders group of the Gumbaynggirr Nation have teamed up with researchers from the University of New England to re-establish customary harvesting of intertidal molluscs within the Sanctuary Zone of the Solitary Islands Marine Park. This project got off the block in 2006 and is aiming to develop the best available method on how to monitor the harvesting impacts on the populations of four different snail species.

I must admit eating snails, is not the first thing that does come to my mind, when I think of tasty seafood. Kina neither, but after having read the article about the feature creature, I became very tempted. Every time I find a sea urchin now washed upon the beaches here, I check its freshness to see if it is maybe good enough for a nibble.

Congratulations to you and your team to the mag, a job truly well done. I look forward to reading the next issue.

Yours sincerely,
Sven Sebastian Uhlmann
National Marine Science Centre
COFFS HARBOUR
NSW 2450, AUSTRALIA

Sebastian was a key researcher in the *Kia Mau te Tītī Mo Ake Tōnu Atu* research project with Rakiura Māori that has just ended after 14 years. *Kai Kōrero* is styled after the community magazine, *Tītī Times* that was produced in that project. *Te Tiaki Mahinga Kai* is building links with other Indigenous communities managing mahinga kai elsewhere around the world. We will try to find out more about the Aboriginal group mentioned by Seb and describe their study in a future issue of *Kai Kōrero*. - HM

M/s Gail Thompson,
Chairperson, *Te Tiaki Mahinga Kai*,
1st February 2008

The Ākaroa Harbour Recreational Fishing Club (Inc) thanks you for the first issue of the magazine *Kai Kōrero*. We appreciate your contact with our club concerning your activities and

Whakatauki

Kō te rā māeneene ā te rāhui Tangaroa.
On a calm, warm day, Tangaroa rests. (Tangaroa is the sea god. No matter what turmoil life may hold, there are always periods of calm).

goals. We are 'gatherers' who devote most of their efforts into preserving, enhancing and utilising the marine environment in a sustainable manner for the benefit of all people.

Your letter and *Kai Kōrero* were discussed at a club Committee on the 30th January and were well commented on by members. We would be happy to contribute on issues of interest. Our club was formed in November 1993 really in response to a proposal to establish a Marine Reserve in Ākaroa Harbour. Being of the view that this would "unduly effect" recreational fishers and others and was an unsatisfactory tool for managing such a well-used marine area we strenuously opposed same electing to support and encourage the establishment of the now gazetted Ākaroa Taiāpure for the whole of the harbour. Our club, with the support of the local Māori communities and commercial fishers applied for Flea Bay to be gazetted as a marine reserve being an option to the Ākaroa Harbour application. Pohatu (Flea Bay) was so gazetted in July 1998. The application for the Ākaroa Harbour marine reserve is yet to be determined.

Our club represents recreational fishers on the Ākaroa Taiāpure Management committee and on the Pohatu Marine Reserve Management Committee; is also represented on the MFish South East Fisheries Committee based in Dunedin and its President is a member of the Minister of Fisheries Amateur Fishers' Advisory Group. As most of our activities involve working with others we like to keep abreast of events in the marine environment. If the content of you first issue is a sample of future publications, it will greatly assist us in broadening our knowledge.

Could you please advise whether the content of *Kai Kōrero* are subject to copy right as we may from time to time find selected passages we would like to insert in our regular news letters to members? We have no desire to infringe on copy right laws.

R A (Bob) Meikle
President
Ākaroa Harbour Recreational Fishing Club (Inc)
P O Box 4307
CHRISTCHURCH 8140
Telephone: (03)349-7684

Kai Kōrero is for the use of anyone dedicated to the TMK Vision. The Ākaroa Recreational Fishing Club obviously share our kaupapa and we would welcome contributions from them and similar groups from right around Aotearoa. Their work is a great example of cross-cultural collaboration for our common good. The material in *Kai Kōrero* is there to be used in any way that makes a difference, so there are no copyright concerns about reprinting the material – go for it Bob and thanks to you and your team of gatherers for your excellent voluntary work! - Editors

Kia ora Henrik,

I would love to receive *Kai Kōrero* so that I can include it in the Enviroschools displays that I put out. It's a great magazine – congratulations both on the important work the team is doing and the publication itself! I've been in touch with the local kura and they want to join the local Enviroschools programme. Cheers,

Jenny Neilson
Education Promotion Officer, Water and Waste Services
Dunedin City Council

Thanks for your response Jenny! It's great to hear that *Kai Kōrero* will be finding its way into kura and other schools. If anyone would like more information on the Enviroschools Programme, check out www.enviroschools.org.nz. It's a great programme aiming to motivate young people to instinctively think and act sustainably. - HM

Send your thoughts to us at

Kai Kōrero
Kā Rakahau o te Ao Tūroa (CSAFE)
University of Otago
PO Box 56
Dunedin

or fax us **(03) 479 5266**
or email us **mahingakai@otago.ac.nz**

Tell us what you think about *Te Tiaki Mahinga Kai* and *Kai Kōrero*! Brickbats and affirmations are all welcome. Our aim is to have at least half of the content created by tāngata whenua involved in mahinga kai management or research.

poet's pen

GATHERING the TOHEROA

By Kendrick Smithyman

Somewhere, away inland, that we decay is
Less pleasantly recalled to us. Mortality
Arranges signs and wistfully flies
The sad gulls from us, where human pity
Or manly ambition are mainly irrelevant,
Fronted by surflines or warmly pondered
Arrested among dunes of spinifex.

Although you truly argue in this mood
The facts, of course, are frankly otherwise.
It is ambition which now regulates these dunes
Planning a future for them as a forest.
Pity perhaps is what presumes our taste,
Hearing of graves found by oven stones, an ear
Pendant recovered from solitary bones.

How one recurs, to graves and talk of bones.
Decay is the first most primitive order
Given this beach by its curious hidden creatures
To whom, loaded with diatoms, tides come
Seeding thirty close miles of sand with shells,
Living and dead sustained in one regimen:
Feed, propagate, be fed on; please someone; die.

Source: *Selected Poems*. AUP 1989, p. 48.
New Zealand Electronic Poetry Centre
www.nzepc.auckland.ac.nz/authors/smithyman/toheroa.asp

KAIMOANA *TOHU TAKA*

Contributed by Alan Gray, from *Seafood Recipes from Stewart Island.*

pāua

1-2 pāua, gutted, cut in fine strips or minced
Olive oil
Small onion diced
¼ - ½ a cup of dry white wine
100g sour cream
300ml cream
Crushed garlic
Salt & pepper
Chopped parsley

Heat the oil and fry the onion. Once the onion is golden add the pāua and fry for a few minutes. Add the wine and simmer for a few more minutes, add sour cream and cream and garlic, salt pepper and parsley for taste. Serve on white bread, on potato or kumara mash, on pasta or rice or just as is.

marinated mussels

500g mussels
1 Tbsp honey
1 Tbsp brown sugar
1 large onion, sliced
Cider or wine vinegar

Steam open the mussels and discard beards. Heat a small amount vinegar to dissolve the honey and brown sugar. Pour over the mussels and sliced onions and top up with more vinegar.

› *did you KNOW?* 1% of the mud and sediment reaching the world's oceans comes from just the East Coast of New Zealand.

Mātauranga Kura Tāiao Fund

Biodiversity Fund

This fund is committed to support tāngata whenua initiatives in the revival, use and retention of traditional Māori knowledge and practices in biodiversity management; to promote biodiversity and ensure traditional knowledge and practices of Māori are respected and preserved in the management of our biodiversity and natural resources.

Objectives of the Trust

- Encourage hapū/iwi use of traditional knowledge and practices in biodiversity management in their rohe.
- Promote and seek support from other agencies that contribute to the mission of the Mātauranga Kura Tāiao Fund.
- Put Māori in a better position to manage their natural resources.
- Contribute to specific objectives of the National Biodirversity Strategy that relates to Māori and use of Mātauranga Māori.
- Restore wetland areas and associated traditional practices.
- Promote hapū nursery developments.
- Promote regional workshops for hapū that will increase capacity to manage their natural resources.
- Promoting inter-agency whole-government approach to achieve better results for hapū and iwi.

Applying for funding

Organisations representative of hapū and iwi can apply. The 7 page application form can be downloaded from the Department of Conservation's website.

Closing dates

Applications can be submitted anytime, the Ngā Whenua Rāhui committee meets 3-4 times a year, at which time applications to the fund are considered.

Please forward your completed forms to:
Ngā Whenua Rāhui
PO Box 10 420
WELLINGTON

Complete information can be found on the Department of Conservation's website www.doc.govt.nz

Navigate to: Getting involved > Landowners > Nga Whenua Rahui > Mātauranga Kura Taiao Fund.

Kaitiaki Mo Tangaroa

Guardians of the Sea Trust

The Guardians of the Sea Charitable Trust / Ngā Kaitiaki mo Tangaroa promotes healthy, sustainable fisheries for the benefit of all New Zealanders. By providing education and public awareness; by supporting innovation and best management practices, our work will provide a legacy for future generations that will be the envy of the world.

Objectives of the Trust

The objects for which the Trust is established and the activities for which the Trust Fund may be applied are limited to charitable purposes within New Zealand, and are as follows:

- to promote, provide and ensure the sustainable use, accessibility and availability of Aoteoroa/New Zealand's fisheries and marine environment for the benefit of the public of New Zealand

- to protect, preserve, improve and enhance Aotearoa/New Zealand's fisheries and marine environment for the sustainable use by and for the benefit of the public of New Zealand
- to work for and make Aotearoa/New Zealand's fisheries and marine environment accessible and available to and for the sustainable use by and for the benefit of the public of New Zealand
- to promote, encourage and support the protection, preservation, improvement and enhancement of Aoteoroa/New Zealand's fisheries and marine environment for the sustainable use by and for the benefit of the public of New Zealand
- to educate, and promote, encourage and support the education of the public of New Zealand about Aoteoroa/New Zealand's fisheries and aquatic environment, and the use of sustainable fishing practices, including the practice of kaitiakitanga
- to carry out and commission the carrying out of research for any one or more of the above objects and purposes
- to seek registration as a charitable entity under the Charities Act 2005 and to arrange with any government or other authority any matter which may seem conducive to any of the objects of the Trust
- to do any other act or thing incidental or conducive to or reasonably necessary or desirable for the attainment of any of the above objects.

Applying for funding

For grants to be considered, the planned outcome must meet one or more of our objects above. A description of your project including costings and the object(s) met should be provided.

Closing dates

Grant applications are considered by the trustees quarterly: in February, May, August and November. If appropriate, the trustees can consider and approve applications at other times

Please forward your completed forms to:

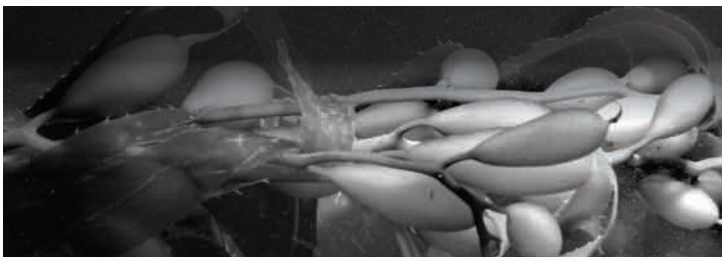
The Secretary,
The Guardians of the Sea Charitable Trust,
103 Sunnyvale Road, Waitakere 0614
or email steve@guardians.org.nz

Complete information can be found on the Guardians of the Sea Charitable Trust website under 'Grants'.

www.guardians.org.nz

Upcoming funding opportunities

Our team will try to alert you to upcoming funding opportunities – check out the project website (www.mahingakai.org.nz) for more examples. Here are a few of the opportunities you should check out to help your mahi on your mātaitai, taiāpure or rāhui. If you need help to write an application – get hold of Henrik Moller on henrik.moller@otago.ac.nz or phone him on 03 4799244.



the *Macrocystis* genus of kelp

Whakatauki

Matariki ahunga nui
Matariki tāpuapua
Matariki hunga nui
Ngā kai a Matariki
Nāna i ao ake ki runga.

When Pleiades,
The gatherer,
Is bright in the sky
The year begins.

The Māori year begins in winter. This beginning is signalled by the rising of Matariki, the Pleiades. Crops have been harvested and the ground prepares itself for spring.

› *did you KNOW?* In favourable conditions a tītī adult (called a kaika) can travel over a 1,000 km a day.

GLOSSARY

Te Reo Māori

ahi kaa
"Keeping the fire going" – ie. ongoing customary use

Aotearoa
New Zealand

awa
river

hapū
sub tribe

hui
meeting

iwi
tribe

ka ora te tāngata
mankind will survive

ka ora te whenua
the land will prosper

kai
food, to eat

kai kōrero
orator(s)

kaimoana
sea food

kaitiaki
guardian(s)

kaitiakitanga
guardianship

kaumātua
elders

ki uta ki tai
from the mountains to the sea

kina
sea urchin

kohanga
nest

kōrero
talk

kūtai
mussel

mahi
work

mahinga kai
food gathering place

marae
forum in front of a meeting house

mātaitai
a community reserve to support customary fishing

mātauranga
knowledge

moana
sea

mokopuna
grandchild

motu
island

Ngā mihi nui ki a rātou
sincere greetings to them

Ngā mihi o te ra
greetings (of the day)

kaupapa
topic

Pākehā
European

pāua
abalone

pūtea
grant / store (of money)

rāhui
temporary closure of an area

rangatiratanga
sovereignty

rohe/takiwā
region

rōpu
group

roto
lake, inside

rūnanga
governing body

taiāpure
a community reserve to support customary fishing

Tangaroa
god of the Sea

tāngata
men

tāngata tiaki
guardians

tāngata whenua
locals (people of the land)

taonga
treasure

Te Tiaki Mahinga Kai
The Care of Food Gathering Places

Te Tipu Putāiao
Plants of the Environment

Te Wai Pounamu
The South Island

tika
proper, right

tikanga
custom

tino rangatiratanga
absolute sovereignty

toheroa
bivalve shellfish

tupuna
ancestor

uri
descendant

waka
canoe

wānanga
place of (higher) learning

whakapapa
genealogy

whakatauki
saying, proverb

whānau
family, to give birth

whānaungatanga
togetherness (of family)

whānui
wide

whenua
land, afterbirth

whiriwhiri whakaaro
sorting out ideas

This glossary was provided by **Rau Kirikiri**, the senior Māori guide of the TMK research team.

Whakatauki

He manako te koura i kore ai.

Crayfish are scarce when they are expected (don't count your chickens before they hatch).

We're on a roll!

Te Tiaki Mahinga Kai is gathering momentum.

The idea for something like *Te Tiaki Mahinga Kai* came from discussions between the Ōraka-Aparima Rūnaka (Murihiku) and University of Otago researchers in 2002 – they wanted to support kaitiakitanga and co-management of all sorts of environmental issues, not just mātaitai and taiāpure. The first funding application failed, so it was not until April 2006 that the concept was reborn to be much more focussed on mahinga kai issues around mātaitai, taiāpure and temporary closures. A steering group of kaumātua and science advisors built the momentum for much of the next year before the first successful funding grant from FRST allowed us to launch in July 2007.

Much of the first six months has concerned network building, establishing governance structures, organising two national hui of *Te Tiaki Mahinga Kai*'s Forum, getting students and Postdocs started, other grants written and sorting through collective research priorities of the flaxroots members. So it was not until December of 2007 that we finally got to start field measurements and interview mātauranga experts – what a relief after all that planning and systems building! Finally we are ready to rock.

The concept of *Te Tiaki Mahinga Kai* is fast catching on judging from the following statistics.

Our first Forum gathering (July 07) had 70 participants; the second (November 07) had 95, of whom many of them new). And look what's happened to the indicators between the publication of *Kai Kōrero* #1 (20 December 2007) and this issue, six months later.

C'mon then – join the train – send us your letters and articles and photos for *Kai Kōrero*; get your local mātaitai, taiāpure and temporary closure management groups to join up; come to our next national hui. It will probably be held at Whakatāne –watch our website (www.mahingakai.org.nz) or sign up for *Whiriwhiri Whakaaro* (our email discussion group) for receiving notice of dates and the pānui.

HM

Indicator	20 Dec 2007 (*Kai Kōrero* #1)	20 June 2008 (*Kai Kōrero* #2)
Iwi entities participating	4	**8**
Kai Kōrero copies distributed	972	**1212**
Whānau and institutions receiving *Kai Kōrero*	755	**913**
'Letters' to *Kai Kōrero*	2	**7**
% of *Kai Kōrero* written by kaitiaki/flaxroots †	28%	**33%**
Te Hao Mātauranga presentations	1	**6**
Research provider institutions contributing to TMK	3	**8**
Visits to TMK's web site	960	**3,183**
Visits to separate pages on website	7,362	**15,878**
Postgraduate students and Postdoctoral fellows contributing research	4	**7**
Successful grant applications (student fellowships and research teams)	9	**25**
Presentations to iwi, hui, conferences and research providers about TMK	35	**47**

† our goal is to achieve 50% content from the flaxroots

Te Tiaki Mahinga Kai's research protocol

Safeguarding cultural safety for both kaitiaki and research providers is essential if *Te Tiaki Mahinga Kai* is going to work for everyone. Research providers are asked to sign up to a Research Protocol that stipulates, amongst other things, the following:

- All research is done with the complete knowledge, permission and guidance of the kaitiaki of a given area
- Local taiāpure, mātaitai, temporary closure or rāhui management groups are not restricted by joining and working with TMK in any way. They are free to engage in projects with whomever they wish.
- No research can be affiliated to TMK unless it is sanctioned by the Forum and the research providers have agreed to abide by the TMK research protocol.
- New scientific research information and data gained for a TMK project is jointly owned by the TMK Forum and researchers. It will be shared and made available to all other kaitiaki. Researchers give to a communal database and take from it to meet the national needs of the kaitiaki.
- Scientific information must be disclosed and published without censorship or erasure, not matter what it says about the sustainability or otherwise of fishing.
- Mātauranga is owned entirely by the contributing informants and their iwi. It may not be disclosed by the researchers without the express permission of the kaitiaki.
- Informants have the right to withdraw at any stage, to direct what happens to the material from any interviews (it can be destroyed or deposited in a safe place), to check all transcripts and remove any material that they wish.
- The kaitiaki will be the first to hear the results and they will be communicated in a way that helps interpretation and spreads the word to other kaitiaki throughout Aotearoa.
- Media statements about the project will be handled jointly and only after agreement between the kaitiaki and the researchers.
- All presentations and written statements will be checked by the kaitiaki before publication.
- The Forum, kaitiaki and research providers work together to secure funding.

You can download a full copy of the research protocol from www.mahingakai.org.nz/about-us/joining-tmk .

HM

***Te Tiaki Mahinga Kai*'s Forum and researchers aspire to conduct its research following Kaupapa Māori principles.**

Aroha ki te tangata
a respect for people

Kanohi kitea
'the face seen' (i.e. you present yourself to people face to face).

Manaaki i te tangata
share and host people, be generous.

Titiro, whakarongo, kōrero
look, listen, (then) speak

Kia tūpato
be cautious

Kaua e māhaki
don't flaunt your knowledge

Kaua e takahi i te mana o te tangata
do not trample over the mana of people

So far (June 2008) the following research and service providers have started to contribute to *Te Tiaki Mahinga Kai*'s using its protocol:

- Allan Wilson Centre
- Aotearoa Elite
- Cawthron Institute
- Rau Kirikiri & Associates
- University of Canterbury
- University of Otago
- Victoria University of Wellington
- Wekaworks Ltd.

Ask an Expert!

If you have a question about mahinga kai, tikanga, mātauranga, or your moana, awa or roto ... then please speak up! We'll do our best to provide you with an answer. You can send your question to 'Ask an Expert', Kā Rakahau o te Ao Tūroa (CSAFE), University of Otago, PO Box 56, Dunedin; or fax us on 03 479 5266. You can also submit your question by email to mahingakai@otago.ac.nz or through the project website (go to www.mahingakai.org.nz and click on the 'Ask an expert' tab on the left hand menu bar.

Te Tipu Putāiao

FRST's leg up for emerging scholars

Te Tiaki Mahinga Kai has received a welcome endorsement of FRST with the provision of funding for emerging scholars to undertake research in the programme. Masters, Postdoctoral fellowships and Bridge-to-Employment grants have been awarded to several in our team and will go a long way towards meeting tuition costs, and will support research costs and additional upskilling needs. Provided students are involved in research that promotes the Ministry of Research, Science & Technology's *Vision Mātauranga* strategy, they are eligible to receive such funding even if they are themselves not of Māori ethnicity. However the candidates need to demonstrate a level of existing cultural competency and a willingness to deepen that skill as part of their research training. They must in fact contribute to one of the four following *Vision Mātauranga* Research themes:

- Indigenous Innovation: Contributing to economic growth through distinctive research and development
- Taiao: Achieving environmental sustainability through Iwi and Hapū relationships with land, water or sea
- Oranga: Improving Māori social well–being through addressing distinct challenges
- Mātauranga: Exploring the interface between indigenous knowledge and research, science or technology.

To learn how to apply, visit FRST's website at www.frst.govt.nz and key in 'TTP fellowships' into the search field.

The support is ace – a step above the usual scholarship amounts for similar postgraduate programmes and there is a generous allocation for field costs. Contact Pip Pehi if you are interested in becoming a research student for *Te Tiaki Mahinga Kai*. If you are interested in becoming a research student for TMK, check out the TMK website or contact Pip Pehi on phillipa.pehi@otago.ac.nz.

HM

FOUNDATION FOR RESEARCH SCIENCE & TECHNOLOGY
Tūāpapa Rangahau Pūtaiao

› *did you KNOW?* Tītī 'motherbirds' returning each year from the northern pacific to produce the chicks harvested by Rakiura Māori average 64,037 km for the round trip. This is the longest recorded migration of any animal tracked to date.

kidz korner

Meet the Mollusk Whānua

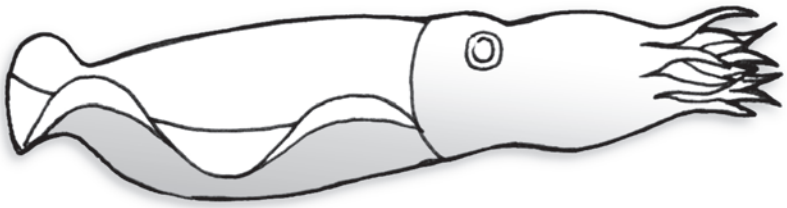
a band of soft-bellied cuzzies!

COLOUR THEM IN
and read about them.

AND maybe you can find some of them on the beach or when you are out fishing!

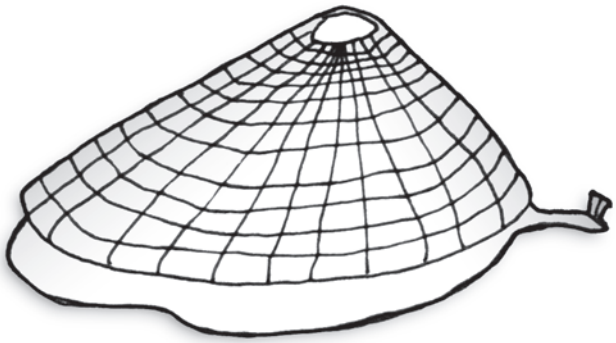
Cephalopods

(means 'head-foot' in Greek) are fast swimmers and are all predators. Some like the nautilus have a hard shell, but most cephalopods have a reduced shell within their soft body.



Gastropods

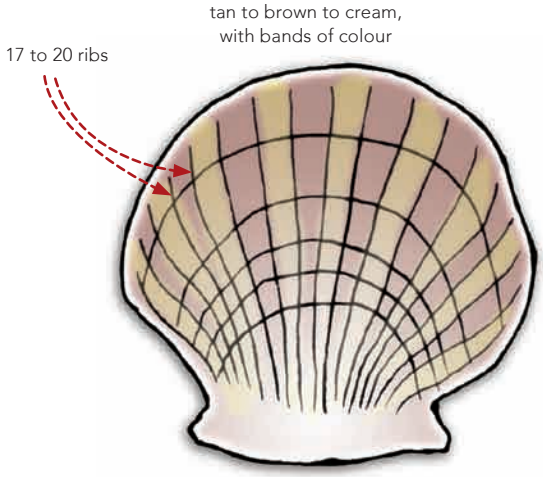
(also called univalves) have only have one shell. They are closely related to pāua, catseyes, whelks, sea and garden snails, slugs and nudibranchs.



Did you know ...
that algae are not classified as plants?

So, what are algae and why should we even know about them? Algae are plant-like marine or freshwater organisms such as pond scum, terrestrial algae, snow algae, seaweeds and phytoplankton. Algae contain chlorophyll, the green stuff that captures energy from the sun by 'photosynthesis'. Algae do not have roots and but instead can take up nutrients over their entire surface, so they are considered so different from the plants that scientists classify them as part of the 'Protists'. Algae are also very special in the way they reproduce. It can happen sexually (where gametes are exchanged to fertilise the parents) and asexually via spores. Most algae have two distinct phases: a microscopically small cell that we can't see floating in the water or sticking to rocks, or a macroscopic 'thalli' – that's the more obvious stage we see at submerged at the beach.

KS



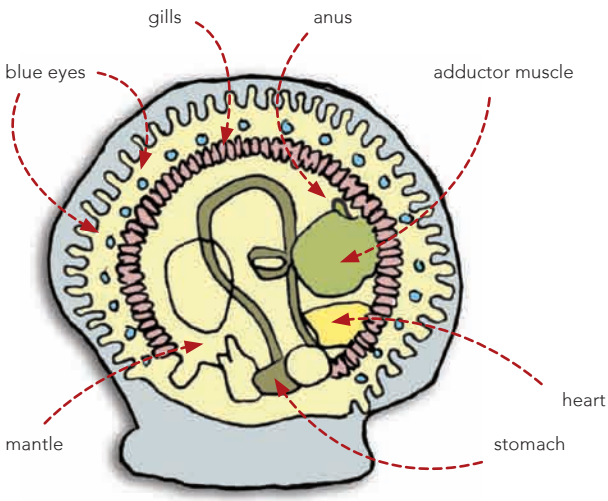
outside the shell

Atlantic Bay Scallop

Aequipecten Irradians

Bivalves

are protected by two hard shells, hinged together. Oysters and mussels are stationary while scallops can move by jet propulsion. Others such as clams have a foot that helps them burrow in the sandy bottom.



inside the shell

You probably wonder how these animals can be cousins, but they are actually pretty closely related. They all belong to the phylum of mollusks, which are invertebrates. This means they have a soft body with a muscular foot, but no backbone. All mollusks also have or have had a hard shell of some sort throughout their development. All mollusks, with the exception of bivalves (filter feeders!) have a special tongue, a 'radula'. The radula has rows of tiny teeth on it, in case of the chiton they even contain metal! Some of the classes that belong into the mollusk phylum are Bivalves, Cephalopods, Chitons and Gastropods. Some mollusks are predators, such as the whelks, the octopus or squid. Others are grazers, such as pāua and limpets. Mussels, cockles, oysters and scallops are filter feeders. They filter the plankton (microscopic small algae and animal particle) out of the seawater.

They are all cuzzies!

rimurapa

This is the rimurapa (bullkelp), used by southern Māori to form poha to store food in. Scientists classify it is *Duvillaea antarctica*. Ecological research suggests that up to 90% of primary production (energy flow) through coastal ecosystems is provided by large seaweeds (macroalgae), and kelps in particular. You can see large critters like pāua and kina feeding on the rimurapa blades directly, but the gradual breakdown of the seaweed also provides lots of tiny particles of food for smaller animals.

Many people wonder why we should be interested in these small things that often don't seem to serve any purpose. But the big seaweeds are an important part of the coastal part of the ocean. They provide food for a wide range of animals (pāua, butterfish or greenbone, kina etc.) and a protecting habitat for most coastal life. Algae provide kohanga (nests) for new recruitment for pāua. Even more importantly, we wouldn't be able to breathe it it weren't for algae: Marine algae produce more than half the world's oxygen and are therefore just as important as the rainforests in South America and Asia for human life. The ozone hole, global warming and ocean acidification are all modern threats to this essential oxygen supply, which makes research on algae one of our main priorities.

KS

FOUNDATION FOR RESEARCH SCIENCE & TECHNOLOGY
Tūāpapa Rangahau Pūtaiao

Te Rūnanga o NGĀI TAHU

UNIVERSITY of OTĀGO
SAPERE AUDE
Te Whare Wānanga o Otāgo
NEW ZEALAND

The *Kai Kōrero* Team

Unless otherwise indicated, the articles in this issue were produced by the research team of *Te Tiaki Mahinga Kai*:

HM – Henrik Moller
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RK – Rau Kirikiri

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sign up to receive Kai Kōrero

Fill in this form and post or fax it to us. You can also go online to register: visit www.mahingakai.org.nz and click on the *Kai Kōrero* link down the left hand side. Choose either to receive it only electronically (ie, via e-mail), or, if you want a belt and braces, ask to have a paper copy mailed out as well as getting an electronic version. The advantage of the electronic version is that it will all be in colour – cost prevents us from producing all but a few pages in colour when we print it.

name

email address

affiliation
eg. iwi, hapū, rūnanga, government agency, university etc.

street address or PO box

city and postcode

mataitai, taiapure, or rahui closure area
Please indicate any management area that you particularly identify with or fish within.

phone number

cut out and send to Kai Kōrero, CSAFE, University of Otago, PO Box 56, Dunedin.