

A photograph of a salmon farm boat deck. In the foreground, a worker in a light blue shirt and bright yellow waders is leaning over the side of the boat, handling large black net-covered cages. Another worker in a dark shirt and pink cap is visible in the background. The boat is on a body of water with hills in the distance. The title 'new zealand aquaculture' is overlaid at the top in yellow and white text.

new zealand
aquaculture

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**Politics in
aquaculture
revealed**

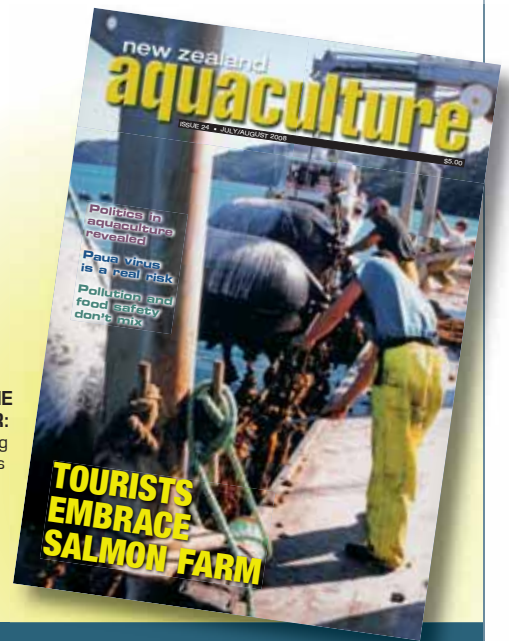
**Paua virus
is a real risk**

**Pollution and
food safety
don't mix**

**TOURISTS
EMBRACE
SALMON FARM**



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Servicing mussel lines

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Email keith@skipper.co.nz
advertising@skipper.co.nz
or stephanie@skipper.co.nz
www.nzaquaculture.co.nz

EDITOR:
Keith Ingram

ASSISTANT EDITOR:
Mark Barratt-Boyes

MANAGER:
Vivienne Ingram

ADVERTISING:
Hamish Stewart
Stephanie Railey, mob 021 954 241

DESIGNER:
Rachel Walker

CONTRIBUTORS:
Wendy Banta, Reg Breakwell, Justine Inns,
Kevin Heasman, Dorothy-Jean McCoubrey,
Andrew Morgan, John Mosig

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A need for BALANCE AND EDUCATION

As an occasional magazine reader, I have come across a couple of articles in the last few weeks that talked about the term "locavore", and another in which a noted editor described a recent experience in Hobart where she enjoyed local wine and seafood sourced from farms within 125km of the café in which she sat.

First off – what is a locavore? It is a person who enjoys or chooses to eat food that is locally produced, locally meaning close to the restaurant or shop the food was purchased from. The term has emerged as food writers, chefs and others in the food industry bemoan the blandness of internationally mass-produced food at the expense of high quality local produce.

Some will say that this is a trend for the well heeled who dine at high-priced eateries and shop at niche grocers. In some cases this may be so, but for the majority of locally grown produce it is not, as the growth in farmers' markets throughout the country will attest. Does this mean it is a convenience issue? This does not hold water either, as most local produce is also available within supermarkets, if you look for it.

On the second point, the editorial all made sense until the writer got to her point – wouldn't it be nice if they could enjoy this at home, meaning Auckland. I reread the article to make sure it was not a calculated dig at producers, eateries or legislators, but unfortunately it was not. As this editor was based in Auckland I was amazed that this experience had to be had offshore when it could have been had at their doorstep.

This amazement turned to deeper thought. This person is possibly not aware that the mussels and oysters they have feasted on in the past while drinking a Henderson wine were in fact produced not more than 50km away, half the distance of the Hobart experience.

That is an issue for the industry – educating buyers that the best seafood in the world is grown on their doorstep – it is not imported but a product of the best environment in the world to grow shellfish.

The attempt to create a greater level of knowledge and subsequent increased demand for the local produce brings me to the next logical step in this discussion. If greater numbers are to be convinced to become locavores, supporting local communities in the process, why are decision makers identifying areas to exclude aquaculture?

They are apparently driven by the public feedback in the consultation process they must all undertake. Is this not the same public that will reap the benefits of locavorism?

Gaining space for aquaculture is an ongoing issue in many regions, and is the reason why people don't like the look of marine farms. That's all it can be, because aquaculture is the most environmentally sustainable primary industry, inhabits communities that other industries are pulling out of, and relieves the environmental pressure of other primary industries. All that, and producing the world's best seafood on our doorstep. What's not to like?

There is a need for balance. People want to eat locally produced food and they want to eat the best, but they do not want to see where it comes from. Marine farmers want to meet this demand and are driven by environmental sustainability, but they also want to enjoy the valuable amenities of the coastline, not dominate the coast with farms.

This argument will go on for some time...



OUR PUBLISHER REFLECTS

As we enter our fifth year publishing *New Zealand Aquaculture*, it is timely to reflect on what has been achieved and where the future lies. This magazine has clearly succeeded in its aim to give the New Zealand aquaculture industry its own identity and to raise its public profile both in a political and community sense. The magazine is available on line www.nzaquaculture.co.nz and the vast number of hits and downloads indicates that we have a strong and growing international readership. It is now time for the industry to take a greater responsibility for the content and readability of this publication and you can do so by telling us about your success stories.

It's not all doom and gloom, as the last four years has revealed. The New Zealand aquaculture industry has made huge advances in both recognition and representation, so let us all build on these strong foundations for the future.

Keith Ingram

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Melanie Wilkinson, a student at Queen Charlotte College's aquaculture academy, talks with younger students Janelle Wills and Brea Mason about greenlipped mussels
PHOTO CREDIT: SOPHIE WILSON

STUDENT EDUCATION KEY TO INDUSTRY

Investment in student education was a key step to the growth of sustainable aquaculture, the Minister of Fisheries, Jim Anderton, told students and staff of Queen Charlotte College in Picton on May 16.

Environmentally sustainable aquaculture was already an important part of New Zealand's economy, he said during a visit to the college's new wet laboratory.

The sector was poised to grow significantly in the next 20 years. "That means we are looking to the students of today to be the leaders of tomorrow in this industry."

Anderton also introduced the government's new "aquaculture in action" programme, a web-based resource developed to provide students with social sciences and scientific learning opportunities around aquaculture.

The college's principal, Tom Parsons, said many students rose to the challenge of being involved in research that could provide real solutions. "The aquaculture academy offers one way the school works to provide those learning experiences."

NEW AQUACULTURE RESOURCE LAUNCHED

A new aquaculture teaching resource for total immersion Maori schools was launched at Manaia School in Coromandel on May 9.

The fact sheet series Aquaculture in Action offers year eight and nine students an opportunity to learn more about aquaculture, in particular marine farming, in New Zealand. The lesson plans were created to help teachers support students to investigate and learn about aquaculture and its impact on our economy and our environment.

"These fact sheets introduce aquaculture to our tamariki and helps them to build an understanding of its role and impacts in the community, environment and economy," the Minister of Maori Affairs, Parekura Horomia, said when he launched the resource.

AQUACULTURE FARM SITES GET THE NOD

The Ministry of Fisheries approved two aquaculture operations, a mussel farm in Tasman Bay and an oyster farm on the Kaipara Harbour, on April 18.

MFish initially declined approval for the 479ha mussel farm to be sited 6km offshore from Motueka. But the applicant, Tasman Mussels, had provided new evidence that showed the impact on the snapper fishery was less than initially estimated. MFish's aquaculture manager, Dan Lees,

said commercial trawlers could operate to within 50m of marine farms rather than the 250m first calculated.

The Tasman District Council now had to consider the application. The mayor, Richard Kempthorne, said aquaculture was an important industry for the district.

A spokesman for Nelson's commercial fishing industry, Tony Stallard, said the ministry's decision was "an about-face."

The proposed oyster farm on the Kaipara Harbour is for a 76ha site. Lees said the farm had been deemed to have little impact on the environment or commercial fishing.

SCIENCE INDUSTRY SEEKS NEW LEADERS

The Cawthron Institute Trust has introduced a new award to enhance leadership within New Zealand's scientific sector.

The Cawthron Science Leader Award, valued at almost \$25,000, will cover all courses, travel and accommodation for the applicant to participate in the 18-month Hillary Leadership Programme, which begins in October. Applications closed on June 20.

The award is a key component of a new partnership between Cawthron and Exceleator: New Zealand Leadership Institute, which is part of the University of Auckland Business School and runs the Hillary Leadership Programme.

This national programme brings together senior leaders and high potential individuals from across sectors and geographies to develop their leadership. Cawthron becomes the tenth partner of Exceleator.

Dr Sutherland says the trust believed in the need for the science sector to invest in its future leaders.

Contact Dr Lester Levy, chief executive officer Exceleator: New Zealand Leadership Institute, phone 09 373 7599 extn 82220.

AQUACULTURE MAY BE BANNED IN AUCKLAND WATERS

The Auckland Regional Council is proposing to ban aquaculture on the Auckland coastline.

The council says it will use the 2005 aquaculture law reforms to best determine where new aquaculture management areas may be established and where they are inappropriate. Auckland was the largest population centre in the country and sat beside valuable and highly used coastal areas, the chairman of the council's regional strategy and planning committee, Paul Walbran, said on April 11. Walbran said the council appreciated that aquaculture offered economic benefits to the region and it had thought carefully about how to balance these competing uses and values.

"At this early stage we consider that large, new aquaculture ventures would be best directed away from the shore. We are working on ways to provide flexibility for various smaller scale aquaculture developments within an otherwise broadly restrictive aquaculture policy framework.

Formal notification of a proposed variation to the Auckland Regional Plan: coastal, is expected to follow in early 2009.

The Minister of Fisheries, Jim Anderton, said the ARC should reconsider its proposal.

"Getting the location for aquaculture right is very important. But a blunt ban on aquaculture anywhere is unjustified," Anderton said on April 22.

HOT SUMMER HITS MUSSEL FARMS

The long and hot summer reduced production in many marine farms at the top of the South Island.

The Waitapu Fishing Company had experienced a 90 percent drop at its spat-catching sites in Golden Bay this season, the worst in at least the last decade, said the managing director, Winnie Rountree. The company owns and manages seven marine farms in Golden Bay and Tasman Bay.

Rountree attributed the decrease to warmer water temperatures. "It's

been up to 22 degrees and mussels die at 26 degrees. Ideally it should be around 19 or 20 degrees."

The New Zealand Marine Farming Association's chief executive, Graeme Coates, said there would still be enough spat for farmers to seed their lines, with 75 percent of spat coming from Kaitia Beach.

Mussel yields had been two to three percent lower than normal, said Sealord's aquaculture manager Dorje Strang.

COUNCIL SAYS POLICY IS NOT A "BLANKET BAN"

The Auckland Regional Council's draft policy framework was not a "blanket ban" on new aquaculture in the Hauraki Gulf, the chairman, Mike Lee, said in a letter to the Minister of Fisheries, Jim Anderton, dated May 2.

The ARC's indicative excluded areas applied to 53 percent of Auckland's approximately 1.1 million ha coastal marine area. This left about 522,000ha, or 47 percent, potentially available to invited private plan change, or IPPC applications for new aquaculture space, not counting sea space for existing farms.

Most of the remaining coastal marine area within excluded areas would also be available to private plan changes, or PPC applications to create new aquaculture space, "though this would not be favoured," Lee said.

The proposed policy did not support large-scale aquaculture ventures close to the coastline. "But this does not preclude such applications being made further offshore."

The policy aimed to provide sufficient flexibility to allow for a range of small-scale aquaculture ventures either inside or

SEALORD CUTS WOULD HIT NELSON HARD

Sealord's announcement on June 15 confirmed that it was cutting jobs at its Nelson mussel factory was a major blow to the regional economy, says the mayor, Kerry Marshall.

Half-shell mussels are labour-intensive, as each one has to be opened and inspected after it is cooked. They also cannot be vacuum packed, reducing their shelf life, and are prone to freezer burn.

Marshall said the cuts would have a major impact on individuals and families, "and that will percolate through."

Sealord's chief executive, Graham Stuart, said the Beatty St plant had been making losses for some time. He said the company had done extensive research on mussels without shells, and believed there were strong markets in Asia and Europe.

As the change goes ahead, 60 permanent and 90 temporary positions would be made available to affected workers, leaving a shortfall of 173 jobs.

outside the excluded areas.

"We consider that the position we have put up for consultation appropriately reflects a fair balance of interests," said Lee.

"We are confident our approach will ultimately establish a regional policy that will provide for sustainable aquaculture in Auckland."

CONTINUED ON PAGE 15 ►

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Anyone can catch a feed at Anatoki Salmon. A couple of satisfied customers land a beauty



Kim Duff prepares salmon fillets for the smoker



SALMON FARM cultivates tourists

BY
JOHN
MOSIG

Tourism and New Zealand go together like the sun and the moon. One of the most scenically stunning countries in the world, it attracts 2.5 million visitors a year, not bad for a country of 4.1 million people.

That's a whopping 61 percent of the population. By comparison, Australia's intake is 27 percent of the population.

Jan Dissel had worked as financial manager for British Petroleum for 30 years when his wife, Gerda, reminded him that you only live twice: the first 50 years and the next 50 years. This led to a search for a lifestyle change that finished up in what must rate as one of the most charming places in the world. They immediately saw that the true potential of the small operation lay in recreational fishing, and set about making the place friendly for tourists.

Situated 10 minutes drive out of picturesque Takaka on the South Island's Golden Bay, Anatoki Salmon has been converted from a commercial farm producing an annual harvest for the wholesale market to an award-winning tourism operation.

The salmon are caught from the ponds, and the angler has the option of either taking them away fresh or, for an extra charge, having them smoked in one of a range of flavours.

Water is diverted from the Anatoki River and goes through a settlement process before returning to the main stream. The company is allowed to take up to 50 percent of the river flow. As the average flow is 2700 litres per second and the farm's requirement is between 700 and 900 litres per second there has never been a water problem.

The water temperature during the summer never goes above 15°C. The hatchery water is supplied from a spring on the farm and comes into the hatchery at between 9°C and 10°C. The region is famous for its spring-fed rivers, and some of the world's purest water runs across the fertile plains of Golden Bay.

Salmonids are not indigenous to New Zealand, and Chinook salmon were introduced between 1875 and 1907, when millions of ova were transhipped from California. The species has had limited success acclimatising and its main relevance is as an aquaculture species.

The layout of the Anatoki farm is simple. There are four raceways plus the Iha catching ponds. A hatchery, feed storage, processing room, smokehouse and office make up the infrastructure. And of course there is a dining area for those who can't wait to get their smoked salmon home.

The production cycle is also straightforward. The ova are purchased from the National Institute for Water and Atmospheric Research hatchery at Silver Streams, south of Christchurch, during the May to June spawning season and are hatched on the farm. At 20 cents each the eggs aren't cheap, but

the hatch rate is around 90 percent.

The salmon are reared in three stages. Once hatched, they are kept in the nursery until they are eight weeks old and have grown to 30mm to 40mm, or to about 1g weight. From there they are stocked in the fry raceway at 40,000 per 140m³. They are fed there for nine months and grown out to 150g.

The fry are hand-fed at first, but Jan says they soon learn to activate the paddle on the self-feeders. Once the fry have reached the size where they would normally smolt and run to the ocean they are transferred to the next 500m³ raceway. The numbers have been reduced by natural attrition, and 35,000 are fed until they reach 500g before being split into the final growout stage. This stage takes six months.

At this point the salmon are split between the two growout raceways and the fish-out pond. Sixteen thousand are stocked evenly between two 150m³ raceways and the remainder swim freely in the pond. The fish are fed a maintenance ration from here on. Jan works on the theory that treating them mean, especially salmon in the fish-out ponds, keeps them keen. It certainly works and there was a continuous stream of people coming from the ponds to the smokers with bucketfuls of freshly caught fish during our visit.

All the Pacific species of salmon die after spawning. That means Jan and Gerda have to clean out their stock before maturity sets in and the hormonal and physiological changes take place that make the fish unpalatable. They have it timed to a tee. At the end of each March they hold a harvest picnic and the fish are removed to make way for the next cohort to come through.

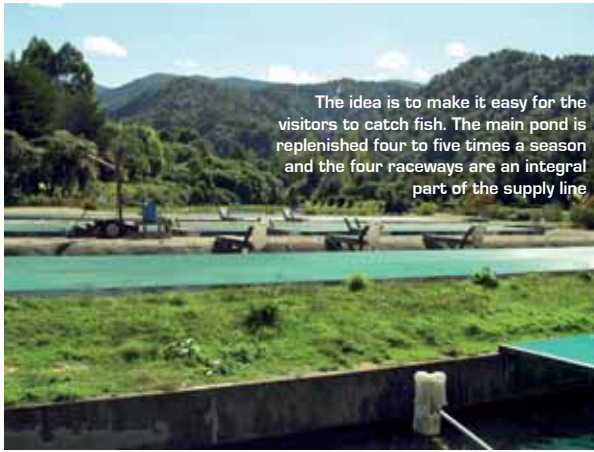
Growth is not the prime issue at Anatoki once the fish have reached optimal size. Once the fish weigh a kilo they are ready to catch. Jan soon worked out that large fish, at \$18 per kilo, make the outing too expensive. With fish between one and 1.5kg the entire family can catch one.

Anatoki uses a mixture of feeds. The local manufacturer, Reliance, make a steam-pressed pellet. Transport is always an added cost in New Zealand, and the mountainous terrain and the reliance on imported fuel makes moving bulky items such as stock food expensive.

The steam-pressed ration costs \$2400 per tonne to land on the farm. They also use Skrettings starter feed which, being a higher protein-extruded imported diet, is 25 percent dearer. The savings come from being able to mince and freeze the fish frames and waste from the processing room.

As with all small farms, production capacity is limited, so Anatoki Salmon has had not only to add value to their product but also cut down on their expenses, particularly labour costs. They have "poo scrapers" modelled on the dredges used to

Salmon fillets are marinated before smoking



The idea is to make it easy for the visitors to catch fish. The main pond is replenished four to five times a season and the four raceways are an integral part of the supply line



Jan proudly stands beside his Qualmark endorsement

clean out the drains that keep the Netherlands dry. The local market gardeners have discovered the benefits of pond waste and, using the "poo scraper", clean the raceways and pond for them free of charge. Then there's the oldest one in the book, sell pellets to visitors and let them feed the fish for nothing.

But the big earner at Anatoki is the value-added smoking. Jan and Gerda are continually experimenting with marinating recipes for fish smoked on the farm for fish-out customers. Visitors can choose from eight flavours: plain smoked, Cajun, lemon pepper, basil and garlic, tandoori, ginger and coriander, curry and the house specialty, built around a sweet paprika base.

And then there is the flagship product, the Classic brand of smoked salmon sold in vacuum packs. It is cured over apple tree roots and prunings and glazed with manuka honey. Jan says it is sensational and a great seller.

Another product is salmon burgers. Made from the minced

wings and trimmings, this pure salmon product is deep-fried and served with salad and chips for a hearty seafood meal.

The farm produces 25 to 30 tonnes a year. Seventy percent of the fish are sold through the fish-out. The balance is sold through local restaurants and supermarkets under the Anatoki and Classic labels. Jan is brand conscious and gives a discount to restaurants that describe his salmon on the menu as Anatoki salmon. Their packaging carries the Qualmark logo as testament to the quality of the product. Supermarket sizes vary from plate size to 2kg.

At the end of the season Jan and Gerda open the farm for the annual Harvest Festival, with music and wine tasting. All the fish are harvested and sold to clear the way for the next batch.

Jan says he and Gerda have never regretted moving to New Zealand. Anatoki Salmon is an example of a family aquaculture operation that has taken a marginal farming undertaking and turned it into a viable and enjoyable enterprise.



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Feeling EXCLUDED?

BY JUSTINE INNS



The Auckland Regional Council has recently indicated its intention to utilise the provisions of the 1991 Resource Management Act 1991 that allow it to identify aquaculture “excluded areas”. The term “excluded areas” alone should be enough to ring a warning bell for aquaculture industry players.

Excluded areas are a creation of the 2004 aquaculture reforms. Those reforms provide that aquaculture can only be carried out in aquaculture management areas, or AMAs, which must be identified in the regional coastal plan. There are three ways to create a new AMA in a regional coastal plan:

- a council-initiated plan change
- a privately initiated plan change (Private Plan Changes – PPC), or
- council-invited individual plan changes (Invited Private Plan Change – IPPC).

As part of the IPPC mechanism, regional councils may, by public notice, identify excluded areas. No “invitations” may be issued in respect of these areas, so no IPPCs can occur in them. The process of identifying excluded areas requires only limited consultation, not the full submission, hearing and Environment Court appeal process that usually applies to planning decisions under the RMA.

What’s more, once excluded areas are identified and publicly notified, there is no provision in the act to challenge, cancel or change their status. In particular, there is no way for the public to initiate their alteration or removal (or, for that matter, their extension).

While excluded areas only prevent IPPCs, the reality is that they will effectively prohibit AMAs from being created by any of the three methods referred to above. Clearly, a council is not going to initiate a plan change to create an AMA in an area it has classified as excluded.

Ordinary PPCs are not prohibited in excluded areas, but unlike in the case of an IPPC, the proponent of an ordinary PPC faces the prospect of the council tendering the right to apply for permits to set up a marine farm in any resulting AMA. It would be a charitable soul who would incur the high cost of proposing a PPC to create an AMA in an excluded area, when it is doubtful whether the attempt would be successful, but highly likely that the council will sell the benefits to the highest bidder if it is!

Clearly, excluded areas have their place as a way, for example, of declaring shipping lanes “out of bounds” for aquaculture. But that isn’t quite how the ARC seems to be planning on using the mechanism.

In March, the ARC confirmed its intention to adopt the IPPC approach to planning for aquaculture and began “preliminary consultation” on how it might do that, including “indicative” excluded areas – in fact, a map showing these areas is the only detail of the proposals that has been released.

Indicative excluded areas covering over half of Auckland’s coastal marine area, mind you, extending a minimum of 5km out from the coastline, include all of the region’s harbours and the coastline and harbours of Great Barrier Island.

These proposed excluded areas are far more extensive than was indicated in earlier constraints maps, which identified things like shipping lanes, and those areas which have been left open for aquaculture are, for the foreseeable future, unlikely to be viable due to technological and financial reasons. The ARC insists that this would not be a “blanket ban” on new aquaculture; the reality is that that is exactly what it would amount to.

The ARC claims that the rationale for the proposed excluded areas lies in the “precautionary principle”. This principle is often applied in environmental management decisions and is generally understood to mean that if an action or policy might cause severe or irreversible harm to people or to the environment, the absence of full scientific certainty as to the likelihood of harm should not be used as a reason to postpone measures to avert that harm.

Does the ARC seriously believe that aquaculture poses such a “serious and irreversible threat” to the public or the environment that it should be banned outright in more than half the region, rather than considered on a case-by-case basis? It is hard to resist the conclusion that the only real threat here is a political one. Perhaps the ARC has simply seized on the excluded areas mechanism as a way of averting the political risk of ratepayers telling them they don’t want aquaculture in their backyards (or on their back beaches, at least). If that is the case, it is clearly a misuse of the mechanism and nothing to do with the precautionary principle.

Proposing that, to all intents and purposes, no new aquaculture will be happening in the Auckland region will leave no-one to complain but the industry, and the ARC has never been too bothered by them. It is only a proposal for consultation, of course, but one we will be watching with interest.



Justine Inns is a partner at Oceanlaw. She previously spent more than a decade as an advisor to various iwi (tribes), including several years with Ngai Tahu.

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Farming consent applications – ARE THEY WHAT YOU THINK?

BY KEVIN HEASMAN,
CAWTHRON INSTITUTE
AND WENDY BANTA,
MINISTRY OF FISHERIES

Under the old aquaculture law, when a marine farmer or potential marine farmer wished to apply for water space in which to farm shellfish or finfish, they had to obtain consent from the local council and a permit from the Ministry of Fisheries to do so. The councils and MFish would study the application from a number of environmental and social viewpoints.

An additional part of this process was to consider the views of the public. With the clean, green image of the general New Zealander in mind, one would guess that the first point of concern from public objectors would be the environmental effects of the farming enterprise. Surprisingly, this is not the case. A study by Wendy Banta and Mark Gibbs in 2006 on Factors Controlling the Development of the Aquaculture Industry in New Zealand¹ shows that environmental effects are a distant second when considering applications at the resource consent stage.

In the Marlborough Sounds from 1995 to 2004, which included about four years of local or national moratoria on applications, 574 applications for water space were made. Of these, 139, or 24 percent, were refused. The reasons for the refusals, bearing in mind that there might be more than one reason in each decision, were

- 95 percent had social concerns
- 48 percent had environmental concerns
- 15 percent had cultural concerns, and
- 11 percent had economic concerns.

This poses a challenge for the regional councils. The councils approach the environmental concerns with a precautionary view and have conservative definitions or pre-set parameters to ensure environmental sustainability. Maximising economic efficiency for the region is also definable and is necessary for regional growth and security.

However, social demands such as recreational fishing, pleasure yachting, diving, tourism, navigation, maintenance of natural character; amenity values and aesthetic appreciation are difficult to define, and determining limits set on people's perceptions and physical views is challenging.

In this light, one would suggest to the farmers that applications for water space would potentially be more successful if they were made in areas that were already highly modified by development and commercial activity, such as forestry. This, however, is not necessarily the case.

The study found that in areas that contained little modification in the form of roads, residences or marine structures, it was unlikely that an application would be successful, as it would be seen to degrade the natural character of an outstanding landscape. If there was already a lot of development in the area, to the point where it was considered a "working landscape", the marine farm application may be rejected, as it would "tip the balance" between a working landscape and excessive activity.

This tends to leave the marine farmer caught between a few bays and the deep blue sea, resulting in the stagnation of the industry. One can only conclude that the social impacts are the central issue influencing the growth of the marine farming industry at this time. In view of this, perhaps the social implications should be considered before applications reach the stage of environmental assessment and monitoring, thus saving considerable time and expense?

It is hoped, for the sake of all those involved, that perhaps the new aquaculture management areas will address this issue through better planning. Time will tell.



1. Cawthron Report 1208 (Factors controlling the development of the aquaculture industry in New Zealand: legislative reform and social carrying capacity. Wendy Banta and Mark Gibbs). It has been peer reviewed and conditionally accepted for publication in the Coastal Management Journal.

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DISQUIET WARRANTED over virus

BY JOHN MOSIG

G'day Kiwi. Wouldn't you know it? We're getting too much of the wet stuff now. It's causing quite a bit of havoc up north, but those downstream are rejoicing in the approach of an inland sea of water and silt. Well, those who have been able to get their stock on high ground in time, that is. The inshore hatchery and nursery zones among the mangroves are not all that displeased, either, but they could do without the influx of plastic bags and shopping trolleys that came down with the floodwaters.

I believe there's some disquiet over there about the abalone disease which causes ganglioneuritis that has broken out along parts of the Victorian coast, notably the western regions, although there has also been an outbreak in Westernport, just to the right on the map of Port Phillip Bay.

It's believed that the transfer of stock from a farm in Western Victoria was responsible for the outbreak, and it seems to have been an isolated case. The Department of Primary Industries' website (See www.dpi.vic.gov.au) says, "The disease causes inflammation of the nervous tissue, resulting in curling of the foot and swelling of the mouth". It's also been identified in the waters along sections of the western coast. There's been plenty of hysteria in the press, too.

Your disquiet is warranted, given the prevailing westward drift and the experience of the pilchard herpes virus. It would be wonderful if a blanket "No worries, mate" could be offered to alleviate those concerns, but unfortunately that's not possible, other than to look at some anecdotal evidence. The department's outpourings are to be found in their website and they don't tell us much more than that Fisheries is on the case. The industry itself will only discuss the matter in very guarded terms. You can draw your own conclusions from that.

The diving sector, which is actually the major shareholder in one of the farms involved, is a powerful fisheries lobby group. It makes up 3/4 of the wild fishery production in Victoria. As they need only a couple of months of actual diving to collect their 20 tonne quota, they have a lot of time on their hands. And with the beach price still over \$30 per kilo, a lot of the folding stuff as well. It's a wicked combination for anyone interested in putting pressure on their main competitor, the farming sector.

Let's digress for a second. The capture and culture sectors are natural commercial competitors. The former relies on demand to drive up prices, and fishing skills to cash in on that scarcity-driven demand. The latter relies on farming skills to satisfy a modern market that demands quality, consistency and convenience, something the wild harvest can't guarantee.

In the case of the abalone industry, for the price of a 20 tonne quota you can build a 120 tonne abalone farm. True, the production costs are frightening, but so are the rewards. And a resource management quota does not control the output. If you want to pour the profits back into the farm you can double the output, presuming of course that you can get a permit to pump the extra water required.

Now where were we? That's right, the anecdotal evidence. Back in the mid-1990s, when the abalone sector was just getting underway, I had the pleasure of visiting one of the west coast farms involved.

At this stage it was the sole pioneer in Victoria of this exciting and potentially lucrative sector. The manager took me down to show me the water intake bay, a rocky shelved area free of silt and fine sand.

It was also about the time when abalone poaching was becoming a major issue. He told me of finding empty mother of pearl shells all over the reefs in his area of the coast, presumably left behind when shucked during a night's poaching raid. Is the penny starting to drop? Could it have been an outbreak of the virus causing ganglioneuritis? We'll never know.

The poaching theory has some merit, as while the diver is collecting, the deck crew is busy shucking and icing down the saleable part of the harvest and dumping the valueless evidence. You are only granted permits to build an abalone farm on a remote part of the coast, and a boat disguised as a fishing trip could easily work the region with little fear of detection.

Just to add to the mix, it was a time when fishoes were in conflict with management over the right to carry firearms. That's right, the guardians of the Queen's deer and abalone had the power, as transportation for the term of your natural life was not logistically possible in this case, to take you out of the game. Actually there was more to it than that. Some of the poachers were well organised and well connected. The side-arms were a great comfort under these circumstances.

The alternative that springs to mind is that the disease is a natural occurrence, most likely triggered by stress. With a string of El Nino events warming the waters, often quite rapidly over the course of a few days, the virus was generated in the wild and transferred to the farms.

We do know that abalone was transferred between farms. That's perfectly legal, and that wild broodstock were introduced to broaden the gene pool, again perfectly legally. But this is not what's worrying you on your side of the ditch.

Here's some encouraging news, I hope. We were holidaying down on the western coast over Christmas when I watched a bunch of holidaymakers harvest a bag of abalone in half an hour from a tidal pool. That's perfectly legal under a recreational licence. Goodness gracious, with our track record, would we even contemplate doing anything illegal? And before you start, underarm was as legal in 1981 as bodyline was in 1932.

The recreational harvesting was on the eastern side of Cape Otway. This makes it downcurrent from the outbreak. With Fisheries Victoria allowing controlled restocking of the affected farms, and the farmers prepared to restock, it would appear that the worst is over. I hope that sets a few paua farmers' minds at rest, and anyone who enjoys a good feed of this overpriced sea snail.

Contact John Mosig on mosig@netspace.net.au



PARTNERS for the FUTURE

BY ANDREW MORGAN

Aquaculture is not just about farming aquatic life. In essence it is a tool to be used as one of the keys to unlocking the future economic success of the nation. Aquaculture is a generic word that encompasses many things. It is not only farming the sea, but also vessel training, the support infrastructure, science, engineering and technology. It is about developing communities, teaching new skills to the labour force, and enabling access to further ocean resources.

Aquaculture facilitates access to other sources of power generation, the spreading of the nation's people out into the sea, life at sea, the security of life and resources at sea and sea-based communities of the future. It is about opening up access to our exclusive economic zone resources.

In achieving this, a single organisation cannot always be all things to all people as it is simply too complex. The issues for various groups, stakeholders and clients are different, and opinions as to what is really important differ.

In essence, different people value different things in a relationship with an organisation. Furthermore, economic transformation and economic growth is not necessarily about the same organisations and people doing more things and inwardly focussing on "patch protection".

It is more about having more people doing different things. Economic transformation is more about "regionalisation", enabling local economies to transform themselves rather than expertise and resources coming and going.

A classic example of the failures of this can be found in the tropical Pacific. Regionalisation is about keeping intellectual capital in an area and the skills and contribution that the people and organisations bring with them. Regional economic growth requires people to contribute not only to solving a problem but also to stay and work, purchase assets, buy and invest in business, create jobs, build real estate and inject financial resources into the region.

Vast numbers of New Zealand people live around the coast. Despite large national centres and cities, more people are moving to other areas where infrastructure has to expand quickly to keep up. All sorts of issues have to be solved, from working with iwi to the supply of water, power, food, healthcare and education. The servicing of an industry such as aquaculture is



no exception. It is a diverse industry when considering the value chain and it sits unequivocally alongside coastal development and regional economic growth. Given New Zealand's long, narrow landscape and huge coastline, aquaculture is a key to realising all of these things.

Consequently, the concept of regional clustering of services, facilities and expertise is critical to the further development and success of the aquaculture industry. Clustering of services in marine and maritime engineering, science and technology, training and education, food technology and information technology provides ready access to expertise.

Aquaculture is one of the key clients in primary production industries for these clusters and their associated coastal communities. Aquaculture will assist in launching the nation into the future successfully in an era of global environmental change and instability. Regionalisation of infrastructure creates a model for clustering in all communities nationally where a critical mass is achieved.

While maintaining a strong customer focus is important, for this to work there has to be partnering on a number of scales. This could be from the local community to organisations with a national focus. This requires organisations to be leaders in partnerships and not autonomous, reactive followers, and in doing so, to take others by the hand and in turn take them into the future, carving out new paths.

An advertisement for Seapa's 'Multi-Purpose' Basket. The background is a blue sky with a large, cylindrical metal basket hanging from a rope. Several smaller, square metal baskets are shown in the foreground. The text is white and yellow, providing details about the product's features and contact information.

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VP-AG24

Pollution problems and food safety – WHOSE PROBLEM IS IT?

BY DOROTHY-JEAN MCCOUBREY



New Zealand has an excellent reputation internationally for producing seafood that is of top quality and safe to eat. This reputation is well deserved, as we live in a relatively unpolluted environment and our food safety management techniques are among the best in the world. Our epidemiological records (illness information) show that consumers are not getting ill from New Zealand's commercial seafood products.

One of the very few episodes with shellfish involved Waikare Inlet in the Bay of Islands. A number of people became ill with norovirus after eating oysters from the area, and to prevent further incidents the public health regulators placed conservative harvesting conditions on the farmers. Who was at fault? Can the blame be laid with the farmers or the government agency responsible for food safety?

Norovirus is a viral illness that causes vomiting and diarrhoea and is transmitted from person-to-person contact or by eating food contaminated with sewage. Intensive investigations were undertaken to find the source of the norovirus in the inlet and the results identified a number of possibilities. The contamination may have come from a community sewage treatment plant in the area, boat discharges or leaking septic tanks in houses near the foreshore. Of course, the oyster farmers did not cause any of these pollution points. They were simply downstream and suffered the consequences of other environmental health problems.

Environmental issues such as global warming and the health issues associated with pollution can create problems that are extensive, difficult and expensive to cure. Such problems are different from those associated with a small retail food outlet. They can be global in scale, cross boundaries and have long-term impacts.

The responsibility for managing such food safety problems does not lie solely with the regulator or, in the case of

Waikare, the oyster producer. They require a large-scale community effort to fix. Ratepayers and taxpayers often have to pay a higher cost to reduce pollution

from septic tanks and sewage treatment plants. Boat owners have to take personal responsibility in installing holding tanks and then take the time to empty them appropriately.

To steal the words from another – it takes an entire village to fix community pollution problems.

Why? Because the entire village and in this case the wider community will pay the cost. In the case of Waikare, as it often is, the oyster farms were the “canaries in the coal mine”. While the oyster farms were for all intents and purposes wiped out, their demise signalled a greater issue with the potential to wreak havoc on the industries beyond aquaculture supporting the small community and the amenities of the region. Examples include tourism and those of us who enjoy swimming, diving and sailing in the area.

It is great to report that recently the problems of the Waikare farmers have been recognised by the “community”, resulting in a working group comprising local and national regulatory agencies, industry and technical experts coming together to tackle the pollution problems. Those on the group represent the Northland Regional Council, the Northland District Council, the New Zealand Food Safety Authority, the Northland District Health Board, the Ministry of Fisheries, the Department of Conservation, the Ministry for the Environment, the Waikare oyster farmers with their technical experts and Aquaculture New Zealand.

Each agency is willing to do whatever it takes to sort out any pollution issues so that the farmers can get back to routinely harvesting safe shellfish. The “community” is taking responsibility, and as a consequence it will gain all the positive benefits associated with living in a clean environment, unpolluted by sewage.

The Waikare Inlet provides a very good example that food safety is everyone's problem, whether it is the producer, the food scientist, the government regulatory agencies that provide the overview, or the food consumer who buys, stores and prepares the food. Each of us has a number of skills and responsibilities in the food safety area, and these should be used to the best of our ability to make sure that the New Zealand seafood industry retains its image as the supplier of excellence.



RECENT EDITORIAL

Dear Sir

Please find enclosed a copy of my recent editorial in *NZ Fishing Coast to Coast* magazine. I was certainly very interested in your editor's comments on the great working relationship you have fostered between the industry and recreational interests and I commend you on that. There is probably no-one better placed to do so and I'm sure your comments will follow this.

On the first day of the Hutchwilco New Zealand Boat Show, a couple of charter operators came to the stand specifically to thank me for publishing the editorial. On the following day Peter Bull approached me on the stand. He asked how he could respond to my article (to date I have not received one) and took exception to the tone. He also told me it was full of inaccuracies and that "industry were unhappy" and that I would be "hearing from them".

My feedback is that Mr Bull is in a group of one. It seems to me that it is all about the money. My suggestion to him is that he works with those who are the strongest advocates of allowing him to run his farm and make what I hope is a very good income. Alienating those around him won't further improve the recreational/commercial relationship, one that I believe has grown positively due to the efforts of many, including yourself and your publications.

Michael Rendle
Editor, *NZ Fishing Coast to Coast*

MICHAEL'S EDITORIAL

On my desk is a letter that was sent to a charter operator in Coromandel as a follow-up to a meeting held by the Coromandel Marine Farmer's Association and charterboat business owners. It comes from Paddy Bull Ltd and is signed by a director, Peter Bull. I quote from the letter:

"Because verbal warnings of the past have been ignored, it is with regret we have to inform you that it is now our policy that any charter vessel wishing to hook up to our longlines will be charged \$300 a week, whether you hook up once or several times a week."

And, "Finally, no charter vessel is to hook up within 50m of a working barge because your customers casting lead-weighted baits with sharp hooks into our berley trail are sometimes misfiring and landing on the barge. Staff safety is paramount to our business."

Where do I start? First, let me say that mussel farms are the ugliest eyesore in our inshore waterways. They are a major hazard to navigation and a total inconvenience to anyone who boats in the areas they are installed. The general public only accepts them because the farms have become an area of commonality in the often strained relationship between commercial operators and recreational fishermen.

Whenever I have been near a working barge the operators have, without exception, done everything to facilitate our fishing. The last time was during a contest last year and the operator called me over to the other side of the barge where he could see the fish. The skippers are all good guys.

That's what makes this so insidious. For years everyone has worked together in great harmony; farms can hold the snapper; mussel farmers get to use our seabed. The ironic part of the whole episode is that the charter owners are likely to be the most skilled operators working around the farms, the most likely to have the correct anchoring gear, and the most likely to ensure that recreational boats operate in a safe and careful manner. Talk about biting the hand... Clearly it's revenue gathering, and the ones doing the paying will be you and me when we charter a boat.

Then of course there is the second stage. If they get away with the charterboats, guess who is next. The whole thing is incredibly badly thought out and has potential to generate massive bad feeling. I believe a couple of the rednecks have already threatened to cut ropes. We don't condone that.

What we do suggest is giving Peter Bull a good look at our collective skyward-pointing index fingers. The last thing he needs is to create factions. If the farm operators are serious about recovering cost for "damages" they would well do better to add a cent to the price of each kilo they sell. As a taxpaying New Zealander I have the right to make use of the water and seabed and I'm not paying directly or indirectly for that right. Peter Bull needs to understand the privilege we allow him in placing his gear in our fishing area. The trade-off is that I may wish to place one of my anchor hooks over his rope.

I hope this is the last we ever hear of the proposal and it just dies away. If not there is always plan B. For a number of years there have been murmurings of the effect of the inshore mussel farms on the water quality and bottom sediment. The volume of nutrients sucked out is apparently huge, and the change to the surrounding bottom even more so.

I spoke to one former mussel farmer who got out because he was concerned about the effects of his farm (his was in the Marlborough Sounds). I know that environmentalists will have this in their sights. I'm sure that when they have finished with small dolphins and dairy run-off into streams they will be looking for the next project. The mussel farmers will want us on their side for that fight. They need to generate that goodwill now.



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From concept TO REALITY

BY REG BREAKWELL, TOOLTECH PTY LTD

Extensive association with the world aquaculture industry over the past 14 years has presented the Brisbane company Tooltech Pty Ltd with many interesting and exciting opportunities in product design, toolmaking and plastic moulding using a range of polymers since 1965.

They first produced the Aqua tray, a versatile shellfish grow-out system in 1994, after consultation and design work with one of Australia's foremost sub-tidal oyster farming companies, Cameron of Tasmania. This product, with its nine-version system, has proven to be the most versatile and comprehensive type of shellfish grow-out unit in the world, able to be used in numerous inter-tidal and sub-tidal farming modes.

The company continued to meet other shellfish farming demands by designing and producing the Aquapurse System with its several mesh versions, culminating in the recent release of two new products, the Aquapurse Mark VI and the 3mm mesh Aquapurse.

The Mark VI is said to be unique in that it is a one-piece unit that requires no assembly other than just to fold up and clip together; and this includes the ends. The only accessory required is whatever type of suspension device that the grower would need in intertidal mode. It requires no accessories for subtidal use.

Over the intervening years, Tooltech has produced a number of other products, and in particular they were very involved in

designing a special trough and bin for extensively farming soft shell crabs. The bins were tooled and moulded for Watermark Seafoods, whose computer-controlled farming system is said to be a world leader.

Tooltech is currently assisting in designing a new type of unit for a large-scale deepwater scallop farming concept. They will also tool and mould this product.

To meet the special needs of oyster growers, who had been using 2.4m tar-coated timber and mesh trays on rails for many generations, they were able to design, tool and mould their tray in environmentally friendly plastic, providing a significant saving on both labour and costs for the grower.

The company says it welcomes the challenge of special design requirements. To assist in meeting any product design task it can make a scale model using 3D data for fused deposit moulding, saving considerable time and cost.

The company says it welcomes inquiries from companies or individuals seeking assistance in developing polymer-made products. It will be exhibiting at the forthcoming Australasian Aquaculture Conference and Trade show in Brisbane, and will also present a conference session entitled From Concept to Reality, in keeping with the conference theme of Innovation in a Global Market.

C



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NEW ZEALAND HELPS SET THE STANDARD

New Zealand is contributing to the development of international standards for shellfish farming, says the Minister of Fisheries, Jim Anderton. It is helping the World Wildlife Fund to develop an international commitment to specific production criteria.

"New Zealand already has a good reputation for the sustainable management of its shellfish farms. It would be good to build on this by being able to demonstrate our industry's performance against international standards," Anderton said.

The Nelson meeting was an initial part of the process to set the standards, which will be measurable and performance-based.

Aquaculture New Zealand and marine and aquaculture scientists also attended the discussions.

The process is expected to take two to three years.

ANTIBIOTICS FOUND IN WILD FISH

Tests performed late last year have revealed that the antibiotic content in wild fish stocks to be four times the levels allowed by Food Standards Australia and New Zealand. However, the salmon industry has rejected suggestions of a problem and has refused to release the investigation details publicly before July.

Wild fish that have eaten the feed containing the antibiotic cannot be quarantined.

Antibiotics used by the salmon industry can enter the human food chain and help engender strains of bacteria resistant to the medication, making them effectively useless in human treatment.

A representative of the Tasmanian Salmonid Growers Association said the industry had placed a voluntary moratorium on one drug used in human medicine. He also insisted that there was no cause for alarm.

LEGAL ACTION OVER MUSSEL FARMS

The Tasman District Council faces potential legal action over approval of the mussel farms in the Golden and Tasman Bays. The chief executive of the Challenger Finfisheries Management Company, Carol Scott, said the action was being taken on behalf of the Challenger companies, which were upset that the council allowed two mussel companies to change their operation from six-monthly seasonal spat catching to year-round mussel farming.

There had been a lack of consultation over the approval of up to 1000ha of mussel farms in region.

Scott said they were concerned about the effects of year-round mussel farming on fishing or fisheries resources, and that they were unable to talk to the council about the issue.

She said the council had decided they didn't need to notify anybody. "Not just us but the rest of the community, and that's the part that got us."

NORTHLAND RESTRICTS AQUACULTURE SITES

Parts of Northland are to become off-limits to marine farming.

The decision by the Northland Regional Council follows a hearing on proposals to establish an aquaculture planning framework for Northland. A key concern raised in the submissions had been that the council's plans did not specifically ban marine farming from certain parts of Northland, said the hearing committee chairperson, Lorraine Hill.

FAN WORM FOUND AT LYTTTELTON

Divers with MAF Biosecurity New Zealand found a new marine pest, the Mediterranean fan worm, on a vessel in Lyttelton on May 28. The single specimen was found during a routine surveillance programme.

The fan worm could spread and impact on other marine species, but posed no risk to human health, said a Biosecurity response manager, Dr Peter Stratford. "It is too early to know the scale of what we are dealing with," he said.



Aquaculture will effectively be off-limits in marine reserves and

- Whangarei Harbour
- the eastern Bay of Islands and inner Doubtless Bay
- Houhora, Parengarenga and Rangaunu Harbours, and
- large parts of Kaipara Harbour

There will be a provision for small, non-commercial marae-based aquaculture proposals. However, these would have to show that they have a negligible impact on the important values of these areas, Hill said.

There will still be many parts of the region that are potentially available for aquaculture, Hill said. "The plan contains robust provisions to guide decisions, and should give both would-be marine farmers and the community at large a great deal more certainty."



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