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Kelp yourself from a tsunami of seaweed-spiked potions

By MARIE MCCULLOUGH of The Philadelphia Inquirer

754 words

3 October 2007

Otago Daily Times

English

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IF YOU want cosmetics that remove cellulite, reduce wrinkles, combat acne, moisturise skin, improve skin elasticity, prevent oxidant damage, and so much more, just **kelp** yourself.

Puns are hard to resist when talking about the growing wave of "marine" cosmetics _ products containing extracts of seaweed, sea mud, and other things you'd probably consider icky at the shore.

"Nature's beauty seacret!" puns an advertisement for SeaAllure, a new antiwrinkle face patch containing a sugar isolated from giant bladder kelp.

Marinova, an Australian biotech company that supplies seaweed blends and extracts to pharmaceutical and health-food companies, says inquiries from cosmetic firms have increased tenfold over the last year.

"Twelve months ago, this market was really in its infancy," Nick Falk, Marinova's business development director, says. There has been a dramatic upturn in interest from cosmetic clients."

Seaweeds _ macroalgae, to be technical _ are rich in sugars, proteins, vitamins, iodine, antioxidants, amino acids, and other biologically active compounds. But experts say that doesn't necessarily mean the claims made for marine cosmetics are based on solid scientific evidence.

"Almost all cosmetics, whatever they're made of, are topical, and probably don't do a lot for you except make you feel good," says Ara DerMarderosian, a professor and expert on bioactive natural products at the University of the Sciences in Philadelphia.

"The seaweed angle is just another novelty. Everybody is trying to go with something new and different."

John Wille, a molecular biologist who has a cosmetic and pharmaceutical consulting firm in Trenton, New Jersey, says: "There is some science behind it, but not much. Not to discredit anything, but most of this is hype."

Underwater plants are not entirely new in the beauty business. Seaweed wraps and "detoxifying" baths are staples of spas, while carrageenan, derived from red seaweed, has long been used as a thickening agent in cosmetics, not to mention icecream.

But these days, there seems to be a tsunami of seaweed-spiked beauty potions.

The Body Shop has a seaweed line that includes a toner, exfoliator, wash and "mattifying" day cream. Nivea for Men has an Oil Control Face Wash with extract of *Fucus vesiculosus* _ giant bladder kelp. Celebrity makeup artist Sue Devitt offers a luxe line of foundations with a triple-seaweed formula, plus Microaquatic Blue Anti-Aging Protection Primer with blue algae. Red Water Laboratories, based in Greece, offers an Anti-cellulite Gel with seaweed and ivy. Another cellulite suppressor is Jergens' Skin-firming Moisturiser with Seaweed Extract.

Seaweed has also inspired a book, *Seaweed: Nature's Secret to Balancing Your Metabolism, Fighting Disease, and Revitalising Body and Soul*.

Written by US nurse Valerie Cooksley, it is billed as a "comprehensive guide" to seaweed in cosmetic, medicinal and nutritional applications.

Historically, seaweed _ which comes in thousands of species in brown, red and green _ has been used as a treatment for cough, asthma, haemorrhoids, goiters, stomach ailments, urinary diseases, tumours, ulcers and headaches, says the National Library of Medicine's Medline database.

The Victorians put seaweed concoctions on their skin to treat sprains, arthritis, bruises, and the "limbs of rickety children," Mr Falk and two of his Marinova colleagues wrote last month in *Cosmetics & Toiletries* magazine.

Some of these premodern uses were not as silly as they may sound today. In laboratory studies, for example, bladder kelp has been shown to have antifungal, antibacterial, anticoagulant, anticancer and antioxidant activity. It also contains iodine, which has been used to treat thyroid disorders such as gout.

In animals, kelp can lower blood sugar.

However, Medline says, "there are no reliable human studies" showing kelp is effective or safe for any of these purposes in people.

Modern cosmetics don't have to be backed up by reliable human studies, either. "Clinically proven" is a popular label, but may simply mean a group was asked to use the product and rate it.

The Body Shop, for example, clinically proved its seaweed products on 60 women with oily skin areas. The vast majority said their skin looked less shiny and felt "fresher and more balanced," according to Allison Harmon Lane, the company's public relations director.

"If a company is not making a health claim, just a cosmetic claim, it's up to that company to decide what kind of tests to do," said Jane Houlihan, vice-president for research at the Environmental Working Group in Washington and author of the advocacy group's cosmetic safety database. "

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BEAUTY FIRMS UNLEASH TSUNAMI OF MARINE COSMETICS

761 words
25 September 2007
New Zealand Press Association
English
(c) 2007 New Zealand Press Association

By Marie McCullough of The Philadelphia Inquirer

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MCT nw

Document NZPA000020070928e39p002go

ARE WE IN DISNEYLAND?

163 words

18 July 2007

The Press (Christchurch)

19

English

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We are again warned against excessive salt intake (July 12). We are also told that iodine deficiency is reappearing as people take the advice. No solution to the dilemma is proffered. In fact, the Ministry of Health has warned against **kelp** as a source of iodine in case you overdose, but it aggressively promotes forced unmeasured doses of toxic fluoride. Are cretins out there seeking company?

I use a British product, Lo-salt, which has a reasonable approximation to the desirable potassium-sodium balance. Unfortunately it has no iodine. New Zealand could make such a product, iodised, from salt at Lake Grassmere.

I get my iodine from kelp tablets. I asked at four pharmacies for potassium iodate tablets. They hadn't heard of them, nor were they in catalogues.

Wellington is supposed to have a stock for crowding out radioactive iodine (I-131) after a nuclear disaster. What's up? Are we in Disneyland?

ALLEN COOKSON 1 RD Oxford

Document THEPRE0020070718e37i0004a

Goat Island: Marine life as it once was

1,159 words

9 May 2007

New Zealand Herald

English

(c) 2007 The New Zealand Herald

New Zealand's first marine reserve was set up 30 years ago this month and has become hugely popular with visitors. In addition, as Jenny and Tony Enderby report, it has provided a stream of knowledge about the country's marine life

SNAPPER, blue maomao and parore swarm near the rocks as a hundred visitors stand and watch. In the shadows of the **kelp** behind them, much larger snapper lurk.

Stories from several generations ago told of all the coast being like this, but today only the coastal waters of the Cape Rodney to Okakari Point Marine Reserve - best known as Goat Island - have fish schools like this.

Thirty years ago, the rock platforms from low tide down to 6 metres depth were grazed barren by sea urchins. The lack of their major predators, snapper and crayfish, allowed the urchins to feed on the kelp forest and eventually almost completely remove it. It was thought that this was normal for the Northland open coast.

In 1965, University of Auckland marine laboratory staff wanted to protect the reefs and sand flats adjacent to the laboratory so that students and scientists could study marine life without people catching, collecting or damaging what they were studying.

Any form of marine protection was unheard of then, and there was no empowering legislation. Professors Val Chapman and John Morton, aided by Dr Bill Ballantine, battled through red tape and opposition and in May 1977, New Zealand's first marine reserve, surrounding Goat Island, was officially opened.

The benefits of marine reserve protection are now obvious to visitors. On busy summer days more than 3000 people squeeze on to the beach. Yet when the reserve was created, no one thought people would come to a beach where they couldn't fish or collect seafood.

Some children who come to the reserve with their school, to snorkel or walk the reefs at low tide, encourage their parents to bring them back again.

Many visitors have never seen a live marine fish, apart from a dying specimen on the end of a fishing line. Some do not venture into the water but prefer to stay dry and watch the fish from the rocks or from the glass-bottom boat.

Many visitors enjoy fishing and collecting seafood outside the protected area but also want places like the marine reserve where they can just look and enjoy the marine life.

While Goat Island's marine reserve was created for scientific purposes, tourism and education benefits sprang up, including a glass-bottom boat business, marine education centre, dive shop, restaurants and accommodation.

The impact is huge for an area of only 5 sq km.

Snapper and crayfish numbers increased fairly quickly. Sea urchin numbers gradually decreased through predation by snapper and crayfish, and the kelp forest began to grow back. Fish and invertebrates that live on or around the kelp returned. Without the reserve, none of this would have been possible.

We have dived and monitored Goat Island's marine life since the 1970s and gradually witnessed an increase in fish numbers. Species like red moki and butterfish were previously comparatively rare, but have now re-established in numbers far greater than along the surrounding coast.

Silver drummer schools were almost gone from the coast before the reserve was set up. These fish have taken longer to come back and just 10 years ago they were small and flighty. Now schools of large drummer move over the shallow rocky reefs at high tide to feed on seaweed. Parore, a similar kelp-eating fish, also abound in the shallows.

Other unusual species, such as giant boarfish, have been seen in 3m or 4m of water in the past few years. Previously they were seen by divers only below 20m. Maybe they once lived in the shallows

around the coast and are returning to their original habitat.

Northern New Zealand's premier food fish, the snapper, were always present but not in the numbers now found here. Recent scientific data using baited underwater video shows their numbers average more than 14 times the numbers found in similar habitats outside the reserve.

The average size of the snapper in the reserve is much greater, too. Some large snapper, first seen in the mid-1990s, are still there today apart from forays outside the reserve during breeding.

Research suggests the breeding snapper in the 5km length of the marine reserve produce eggs equivalent to 90km of unprotected coast. At dive sites outside marine reserves, snapper are not easily approachable, but at Goat Island they follow divers, looking for anything uncovered in the sand.

Some reefs now harbour hundreds of crayfish, the largest over 5kg. Many of the large ones live in the same area for several years. They are mainly red crayfish, but in recent years small numbers of green or packhorse crayfish have reappeared.

Red crayfish have been studied at length, and while numbers vary from year to year, their numbers within the marine reserve are between 12 and 23 times greater than outside. Large male crayfish actively seek out large female crayfish to mate with, and studies show that very large crayfish produce a far higher number of eggs than smaller crayfish, proportionate to their size.

The marine reserve's crayfish stocks and their habit of wandering outside the boundaries are known to local crayfishers, and the boundaries of the marine reserve are dotted with commercial crayfish pots.

Studies involved the tagging of crayfish within the reserve and along the boundaries to learn about seasonal movement. In one study, of 429 crayfish tagged at a site, 106 were not seen again but 21 per cent were resighted there a year later.

Snapper studies involving tagged fish were also carried out over a period of years. Of those studied, around a third left the reserve and were not seen again, a third left the reserve and reappeared at a later date and the remainder stayed within the reserve boundaries, usually foraging over a relatively small area.

Studies of snapper numbers have compared Goat Island with the Tawharanui Marine Park, 10km to the south, and the Cathedral Cove Marine Reserve on the eastern side of the Coromandel Peninsula.

These studies showed higher numbers of snapper at Goat Island than the other two sites, but all three showed much higher densities of larger fish within the boundaries than on similar habitat zones outside.

Thirty years after its opening, the Goat Island marine reserve is still changing as resident marine life populations fluctuate. While numbers of crayfish and snapper are recorded by scientists, other species are noted by divers and snorkellers who dive the marine reserve regularly.

New Zealand's first marine reserve is educating people in the benefits that protecting a section of the coastline can provide. This increased awareness will see future generations enjoy marine life in numbers not thought possible only a few years ago.

RESERVE09

Document NZHLD00020070508e3590002q

SKINCARE GOES NATIVE

Carolyn ENTING

279 words

12 October 2006

Dominion Post

3

English

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NEW Zealand's separation from other land masses millions of years ago allowed many ancient plants to survive and evolve in isolation. More than 80 per cent are not found anywhere else in the world and many have healing and hydrating properties.

Living Nature, a pioneer in the field of skincare, has been using native ingredients, including harakeke (flax), **kelp**, halloysite clay, totarol, manuka honey and oil and kumerahou, in its skincare range for nearly 20 years. In August the company began its annual harvest of kumerahou, commonly known as gum digger's soap because of its lathering ability.

A natural cleanser, it also replaces the need to use sodium lauryl sulfate, a common ingredient found in foaming personal care products, which often irritates the skin.

Living Nature has added to its recently repackaged range products including Firming Eye Gel, Purifying Hand Wash, Balancing Conditioner and Body Bars. Later this year it is re-launching its Colours Cosmetic range and a skincare range for men.

Plantogen, also made in New Zealand, is one of several skincare ranges using indigenous ingredients. It has been the range of choice of Wellington boutique spa Bodyhaven for the past two years.

Its hydrating moisturiser, which contains manuka honey and green tea, and described by Bodyhaven's Ana Maria Moore as an immediate skin booster, is popular with airline staff working in dehydrating pressurised cabins. The company also uses geothermal clay from Rotorua, rich in silica and other minerals, for its facial mask.

These product ranges, alongside Hema, are leading the way in the natural cosmetics industry, which is growing worldwide at 10 times the rate of mainstream cosmetics.

Document DOMPOS0020061014e2ac00005

Invasive Asian seaweed threatens Hauraki Gulf

by Anne Beston environment reporter
420 words
14 July 2005
New Zealand Herald
A04
English
(c) 2005 The New Zealand Herald

Kelp described as 'gorse of the sea' is one of the world's 100 worst invasive species

It may be too late to protect the Hauraki Gulf from an invasive **kelp** dubbed 'the gorse of the sea' after the discovery of an infestation on Auckland's waterfront.

Undaria, also known as Asian kelp and listed as one of the world's 100 worst invasive species, was discovered at Westhaven Marina late last year. A survey found colonies from the marina to Marsden Wharf and in the Viaduct Basin near the Team New Zealand base.

The worry now is that the kelp, which can grow to around 1.8m and rapidly colonises the seabed, will spread into harbours at Great Barrier Island or into marine reserves further north such as the one at Goat Island, Leigh.

It is thought the kelp arrived here on the hull of a contaminated barge or similar vessel. Undaria spreads by clinging to the hull of boats or to wharf and marina piles and releases reproductive spores. It was first found in New Zealand in Wellington Harbour in 1987 and since then has been found at every major port except Tauranga.

It has spread to Stewart Island, Kaikoura, Golden Bay and the Coromandel Peninsula but so far none has been found in Fiordland. Biosecurity New Zealand, the government agency dealing with land and marine pests, kicked for touch on the problem three years ago by decreeing the seaweed a 'regional' problem, handing the control costs to regional councils.

It has been controlled at Stewart Island and was eradicated from the Chatham Islands but all government funding for control or eradication has now stopped.

Yesterday Auckland Regional Councillors lashed out at Biosecurity New Zealand.

'Fair and square it's the Government's responsibility,' said David Hay.

ARC parks and heritage chairwoman Sandra Coney said because undaria was thought to like colder water, it was thought it would not get this far north.

'It's not behaving as predicted. We don't even know if it's spread to the outer islands of the gulf but a do-nothing approach is not an option,' she said.

The ARC estimates containing it in the Waitemata could cost \$300,000 in the first year and around \$150,000 each year after that. Ms Coney said the council would raise the issue with Biosecurity Minister Jim Sutton and Conservation Minister Chris Carter.

ON THE WEB nzherald.co.nz/environment

UNDARIA14

Document NZHLD00020050713e17e0006i

A bastion of winter snapper

92 words

10 July 2005

New Zealand Herald

57

English

(c) 2005 The New Zealand Herald

THE WEST and East Bastion reefs are found at the mouth of the Waitemata Harbour, West Bastion reef is 500m sou- east of Bean Rock Light House. (GPS mark is for the northern marker) and East Bastion Reef is approx 1,000 metres to the east. Both of these large reef systems will hold resident winter snapper.

Anchor back from the foul so that when you cast your baits they sit right on the edge of the **kelp** line.

Next week's spot: Water Tower - Motuihe.

SPOT10

Document NZHLD00020050709e17a00040

Winter Garden

127 words

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New Zealand Herald

57

English

(c) 2005 The New Zealand Herald

LOCATED ON the eastern side of Rakino Island in the Hauraki Gulf is a large bay called Maori Garden Bay. From the northern end of the bay a finger of a reef runs out to the south east. This is a great winter spot but the bay is fairly bouldery with lots of **kelp** so you may lose a bit of tackle. The end of the reef drops off to 10m and, on an outgoing tide, you can fish back and take advantage of the berley that drops down both sides of the reef.

You'll not need sinkers and be sure to cast a bait into the bay, too, as not all lazy fish live in the reef.

Next week's spot: Wellington Rock.

Document NZHLD00020050611e16c0001e

NZ FOOD SAFE BUT CONCERN OVER IODINE LEVELS ASSOCIATED WITH KELP.

351 words
26 April 2004
New Zealand Press Association
English
(c) 2004 New Zealand Press Association

Wellington, April 26 - Food safety regulators are looking into concerns about high iodine levels associated with **kelp** as a food ingredient, after the issue was highlighted in a regular survey programme.

In a statement today the New Zealand Food Safety Authority said the high iodine level in a soy milk product line was the only concern in second quarter results for the 2003/04 Total Diet Survey.

No adverse effects had been reported from the product, and production had immediately ceased.

The diet survey and other monitoring programmes, for which results were also released today, confirmed this country's food supply was among the safest in the world, the authority said.

Executive director Andrew McKenzie said of 117,340 tests for chemical residues, just nine had been over the maximum residue limit (MRL).

He pointed out animal samples tested were tissues and samples expected to have the highest concentration of residues. Many were generally not food products, including urine, liver and other organs and fluids, he said.

MRLs also had big margins of safety built into them, and were not safety levels.

The soy milk product line with high levels of iodine used kelp as a flavouring, Dr McKenzie said.

The manufacturer had immediately ceased production and re-formulated the product line. Because of the manufacturer's full and willing co-operation, and because the issue had been resolved, the product line would not be named by the authority.

"However, if people are concerned about the amount of kelp they have been consuming in their diet, they should consult their doctor.

"Having been alerted to the potential problem of kelp as an ingredient, and associated high iodine levels, (the authority) is conducting further work in this area," Dr McKenzie said.

Along with the diet survey, other results released today were from the Animal Products Residue Monitoring Programme and Dairy Monitoring Programme.

The programmes covered a comprehensive range of common New Zealand foods, both at the production stage and at the point of sale to consumers.

NZPA WGT mjd mgr jm.

Document NZPA000020040426e04q00041

'BLACKBERRY OF THE SEA' SPREADS NORTH INTO FIRTH OF THAMES.

629 words
21 August 2002
New Zealand Press Association
English
(c) 2002 New Zealand Press Association

Wellington, Aug 21 - Environmentalists say the spread of the invasive Asian **kelp** undaria pinnatifida into the Firth of Thames highlights the need for stronger marine biosecurity.

"Until now, the nearest undaria population to the Firth of Thames was in Gisborne," senior Forest and Bird researcher Barry Weeber said today.

Undaria was discovered in the Firth of Thames by aquaculture operators and confirmed by the Cawthron Institute.

Undaria is seen as a major pest because it grows rapidly and spreads easily, overwhelming native seaweed.

"Eradicating undaria from the Firth of Thames now, while there is still a low population, is the only way to stop it spreading around the region," said Mr Weeber. He also called for the Fisheries Ministry to complete a long-delayed undaria pest management strategy and control the transfer of aquaculture spat and equipment between farms.

"The ministry and the regional councils need to commit to eradicating undaria from the Firth of Thames before it spreads to other areas within the Auckland region and beyond," Mr Weeber said. Undaria was found in Wellington harbour in 1987, and also at Timaru but is not yet in Tauranga or New Plymouth harbours.

The Government has funded an eradication effort on Stewart Island since 1997, and later at Bluff. In 2000 the Government directed the Ministry of Fisheries to develop a national pest management strategy to prevent introduction of undaria in certain areas because of undaria's "perceived threat" to natural ecosystems, in Fiordland and the sub-Antarctic islands.

A national pest management strategy would provide for long-term management, maintain the benefits of the eradication programme and provide a framework for the containment and control of the seaweed in other areas.

Mr Weeber said that as eradication of undaria was expensive and uncertain, aquaculture should not be allowed in new areas until methods for preventing its spread had been implemented.

Eradication of undaria from the hull of a sunken fishing boat at the Chatham Islands and the undaria eradication programme in Stewart Island showed that localised eradication of undaria might be possible, if the problem was picked up in time. The seaweed grew best at around 14degC, so summer temperatures might make it easier to eradicate undaria from northern areas, such as the Firth of Thames, if the problem is addressed early enough.

Mr Weeber said eradication needed to be complemented with measures to prevent re-invasion through controls on the transfer of aquaculture spat and equipment and monitoring of boat hulls and moorings around ports and popular anchorages.

The weed had also been found on mussel lines at Collingwood in Golden Bay.

Mr Weeber described undaria as "the blackberry of the sea".

It required a hard substrate such as a rocky coast or marine farming buoys and lines to establish, and in places such as Moeraki, in North Otago, undaria had smothered huge areas and completely changed the marine ecology.

"It has the potential to completely change rocky shores around New Zealand," Mr Weeber said in a statement.

Research showed substantial alteration of the native macro-algal and sub-canopy community structure on coastline colonised by undaria, which was likely to have longterm effects on the structure of reef communities and their dependent species.

While the Government has spent millions of dollars trying to eradicate the weed in a few sites, it has also funded Cawthron Institute investigation of its potential as an export harvest.

Undaria is valued in Japan as a food called wakame and was sold in dried form for reconstitution in soups, salads and sushi. While some undaria is harvested in the wild in Japan, most was now grown in marine areas alongside more traditional operations, such as oyster farms.

NZPA WGT kca reg.

Document nzpa000020020821dy8I000gs

BIG SEAS EAT INTO KAIKOURA RESERVES.

295 words
23 April 2002
The Christchurch Press
4

English
(c) 2002 Knight-Ridder/Tribune Business News

Parts of reserves along Kaikoura's coastline have been claimed by the huge seas that pounded the rocky shore this month.

The waves, churned up by stiff southerly winds, also deposited gravel, driftwood, and **kelp** on other parts of the coastline and destroyed boat ramps or their approaches.

Neville Burnby, who owns the Kaikoura Coastal Camp grounds with his wife, Judy, said yesterday that waves up to 15m high had lashed the coast, leaving a huge clean-up job in their wake.

The clean-up had been delayed while damage to sensitive coastal areas was assessed, but it was hoped it could start this week.

The Boat Harbour reserve was one of the hardest-hit areas, with water washing into the ablution blocks, washing machines, and dryers. Septic tanks had to be emptied and their lines flushed.

The motors in the machines had to be replaced, and the floors on the ablution blocks would have to be resurfaced, said Mr Burnby.

Erosion had reduced the size of the Omihi reserve, and shingle had been strewn over the Paia Point camping ground and the Kie Kie reserve.

"However, we are still looking forward to accommodating people this weekend," said Mr Burnby.

He held a meeting with Kaikoura Mayor Jim Abernethy yesterday to discuss the damage and clean-up, and how the problem could be minimised in the next storm.

"Thousands and thousands of people have enjoyed this coastline, and the people involved with it have a moral obligation to protect it," said Mr Burnby.

"We have to do what we can to prevent damage or minimise it."

There were small things that could be done for a start, including placing boulders in strategic places and planting trees and selected grasses.

Document thepre0020020424dy4n0000e

NEW ZEALAND'S 'BIONIC KELP' MAY BE WORLD'S STRONGEST.

197 words

7 May 2001

The Dominion

7

English

(c) 2001 The Dominion, INL .

AS WELL as being among the world's biggest, New Zealand's giant seaweed could be the strongest, somehow surviving and flourishing while being constantly pounded by waves.

A joint National Institute of Water and Atmospheric Research and Otago University botany department report calls it "bionic **kelp**", and confirms the remarkable size it can grow to - with individual plants weighing in at more than 70 kilograms and carrying about 200 fronds. The research, by Craig Stevens, Catriona Hurd, Murray Smith and Deane Harder, may also have solved the greater mystery: how such flora can do so well on a rocky coastline, pounded by the sea for weeks on end.

The study's first finding was that the kelp, *Durvillaea antarctica*, literally glues itself to the rocks.

But this left the floating part exposed to the full force of nature, making its survival even more problematic. The answer, they found, was a unique internal honeycomb in the kelp, with air-filled pockets making it "stretchy" as well as light.

Combine its advanced flotation ability and its elasticity, and you get a plant uniquely adapted for incredibly harsh conditions.

Document domn000020010711dx570024o

MUSSELS AT RISK FROM ASIAN WEED, SCHOOLGIRL STUDY FINDS.

349 words
31 October 2000
New Zealand Press Association
English
(c) 2000 New Zealand Press Association

Blenheim, Oct 31 - A 12-year-old Blenheim schoolgirl's science project on the Asian **kelp** undaria predicts the weed will have a large impact on future marine life.

Blenheim Intermediate schoolgirl Emma Grose surprised even her father, Roy Grose of the Department of Conservation in Picton, with her findings.

Mr Grose said Emma's research proved undaria restricts the ability of blue mussels to filter feed and was having a detrimental effect on mussel beds.

Emma found the kelp was also displacing other native seaweeds and was more widely spread in the inner Queen Charlotte Sound than DOC had thought.

Emma's project had opened the way for a student to do in-depth research along the lines of her study, Mr Grose said.

The youngster was awarded second prize in the Marlborough Lines Science and Technology Fair for her project.

Observing the weed at two sites in Bobs Bay, Picton Harbour, and one in Waikawa Bay, she found it competing with native sea weeds and marine life and taking over their habitat.

On inspecting blue mussels, she found the kelp's roots wrap around the mussels, suffocating and killing some. The mussels look unhealthy, discoloured and slimy inside.

Emma found sites with undaria lacked native seaweed varieties, but where it was absent, a wide variety of native seaweeds were found and a number of marine organisms.

Graeme Coates, executive officer of the New Zealand Marine Farming Association, said mussel farmers regarded undaria as a slight nuisance but no threat to the mussel industry.

Undaria was first noticed in New Zealand in 1987 and is spread in ballast tanks and on boat hulls. It prefers cold water and doesn't grow at the top of the North Island.

The government has directed the Ministry of Fisheries to develop a national pest management strategy to prevent introduction of undaria in certain areas, such as Stewart Island.

CAPTION - Emma Grose with the Asian kelp, undaria, a study of which won her second prize in the Marlborough Lines Science and Technology Fair.

Document nzpa000020010816dwav00978

DIVERS FIND PORT NELSON RIDDLED WITH INVASIVE SEAWEED.

260 words
19 September 2000
New Zealand Press Association
English
(c) 2000 New Zealand Press Association

Nelson, Sept 19 - Divers surveying Port Nelson for the invasive Asian **kelp** undaria found it growing on about 50 boats in Nelson marina.

Last year a similar survey found only one boat had been infected with the fast-growing **kelp**, which it is feared could pose a threat to the coastline, fisheries and aquaculture industries.

Divers who have been clearing Stewart Island's Big Glory Bay on Sunday surveyed the extent of the weed's spread around the port and Nelson Haven.

They are to spend until tomorrow clearing the weed as part of an annual \$14,000 programme paid for by Port Nelson and the Nelson City Council.

Port Nelson environmental officer Jim Lane said he suspected the rapid spread of the weed through the marina had been boosted by the arrival of one or two contaminated boats.

He planned to talk to boat owners today.

The divers are to concentrate their efforts on removing the weed from pleasure craft and structures within the marina to try and ensure the weed is not transferred to the Abel Tasman National Park coastline or Nelson shellfish farms.

Diving supervisor Paul Young said that unless managed, the weed would overtake parts of the intertidal shoreline and create its own ecosystem by cutting out light.

"Annual operations are not enough to manage the situation, but it is better than nothing."

Mr Lane said as a private individual he was concerned by the lack of government action over the spread of the weed around the coastline.

Document nzpa000020010816dw9j00187

NELSON DIVERS DIG DEEP TO FIGHT WEED.

272 words
3 July 2000
New Zealand Press Association
English
(c) 2000 New Zealand Press Association

Nelson, July 3 - Nelson Underwater Club members did a spot of weeding yesterday to help keep the city's harbour clear of the Asian **kelp** undaria.

Undaria, which is often called the "gorse of the sea", arrived in Nelson and other New Zealand ports during the 1980s on the bottom of ships from Asia.

The weed is a delicacy in Japan but it is considered a pest in New Zealand because it crowds out other species in the marine environment and alters the ecological balance.

Club captain Eric Simmons said the dive was prompted by a decision to "adopt" the Fifeshire Rock, after a similar exercise last year netted eight tonnes of the weed from the rock and Haulashore Island.

He said the weed-clearing dive was a "bit of a social get-together and a community type service".

The group timed the dive to coincide with a very high tide and because the weed flourished in colder water, growing about a centimetre a day during winter, he said.

The dive netted half a tonne of weed, a fraction of last year's catch.

Mr Simmons said it was good the divers were making an impression, but a pity they hadn't found much weed. Unlike last year, when there were ample supplies of the weed, the divers had to search quite hard to find it.

But yesterday's effort confirmed port officials' findings that there was only 20 percent regrowth in the areas covered last year.

Mr Simmons said the club was looking at returning to the rock in September to do another dive.

Document nzpa000020010816dw73011iu

INVASION OF THE SEASIDE STRANGLER.

By Murray WILLIAMS.

921 words

29 March 2000

The Dominion

13

English

(c) 2000 The Dominion, INL .

Some see the invasive Asian **kelp** undaria as the marine equivalent of gorse or old man's beard, while others think it could become a multimillion-dollar export earner. Murray Williams reports.

THE alarm bells that rang in the Chatham Islands when the brown **kelp** undaria pinnatifida was found on the hull of the sunken trawler Seafresh 1 this month were first heard in Wellington and Timaru in the early 1980s.

The seaweed, which is native to China, Japan and Korea, is thought to have arrived on ships' hulls or in ballast water and once established, it can be spread on marine farming structures via anchors, ropes, nets, cray pots, floats, dive gear and flotsam.

The easiest way to distinguish undaria from New Zealand native kelps is a frilly, spore-producing structure near the base of the plant and a prominent spine. In its natural habitat it matures in late winter and dies off as the water warms. It can grow up to two metres long and thrives on rocky coasts.

While undaria is invasive and its long-term effects on other marine life are unknown, it is also a delicacy in Japan, where it is called wakame and is used as a salad vegetable and in miso soup.

Wakame, which can be bought in New Zealand supermarkets, looks like purple, rolled up granules in dry form, but turns a brilliant emerald-green when boiled.

At first, undaria was thought to thrive only in sheltered harbours - it is being cultivated on a trial basis at Mahanga Bay on Miramar peninsula and in the Marlborough Sounds - but it is now found on the coast from Gisborne to Stewart Island. Northern waters from East Cape to Cape Reinga are thought to be too warm.

Since 1997, the Government has been funding an attempt to eradicate undaria from Stewart Island's Big Glory Bay and from Bluff Harbour.

In January it was found on 11 marine farm structures off Collingwood in Golden Bay, where tension between marine farming and conservation interests is already high, and the find has raised further fears about the vulnerability of the bay's clear water and golden sands.

The Fisheries Ministry is also looking at a national pest management strategy and a discussion paper prepared for it says containing undaria to its current distribution is likely to be unrealistic. A more feasible approach would be to focus on high-priority areas as is done for other hard-to-control weeds such as old man's beard. Emphasis would be on early detection and response to infestations in high-value areas.

A preliminary list of these areas includes Fiordland and Abel Tasman national parks, Stewart Island, the sub-Antarctic islands and the Chathams.

AT THE same time, researchers have also been looking for ways to make a buck from the one of the latest in a long line of invasive species. The Cawthron Institute has been working on ways to control and cultivate undaria, which Forest and Bird Protection Society spokesman Barry Weeber says is bizarre.

It would be a "real disaster" if undaria established itself in the Chathams, says Mr Weeber, adding that the emphasis should be on control, not cultivation for Japanese restaurants.

Institute chief executive Graeme Robertson says research into cultivation and control are not as contradictory as they might seem.

"The knowledge gained about its life cycle and propagation are very useful when you study its performance as an invader."

The institute could move on to commercial trials but from July, it plans to switch to native seaweeds.

Mr Robertson says undaria could be compared with pine trees, an important industry on one hand, but also a pest because of the spread of wildings in Tongariro National Park.

He says Japanese restaurants have a high regard for the quality of New Zealand undaria and there could be a huge export market.

One difference between it and another invasive species from Asia, such as the Pacific rock oyster, is that we eat the latter, Mr Robertson says.

Museum of New Zealand curator of botany Wendy Nelson says undaria is a very serious problem and its presence on Wellington's south coast "makes me weep".

There are many questions about how much damage it is doing and what effect it will have on species such as paua and kina, Dr Nelson says.

"We spend a lot of money on weeds and insect pests on land, but we don't give the marine environment the same kind of attention ... we need to be clean blue as well as clean green."

New Zealand's approach to undaria has a chance of success, but native seaweeds are not equipped to deal with such a robust species, she says.

Undaria may be edible, but so are deer or rabbits and no one would suggest not trying to control them, Dr Nelson says.

The Conservation Department says three years of hard work by divers has reduced undaria by about 85 per cent in Big Glory Bay, but Bluff is the next big challenge.

Divers and volunteers have also cleared more than five tonnes from Nelson harbour, where undaria was first identified in 1997 on a logging barge towed from the Marlborough Sounds.

The discussion paper says undaria has already changed the natural character and ecology of some areas, but significant impacts on commercial activities have not been documented and are considered unlikely, though it says long-term effects are uncertain.

(c) The Dominion, INL 2000.

Document domn000020010806dw3t00fxe

KELP CHIPS, OTAGO WAY.

By Mike CREAN.
369 words
14 March 2000
The Christchurch Press
17
English
(c) 2000 Knight-Ridder/Tribune Business News

Seaweed chips are great with beer, says Sally Carson. The programme director of Otago University's marine studies centre is a fan of seaweed. She gathers it, rinses it in fresh water, then hangs it from her clothesline for two hours to dry. To complete the drying, she hangs the seaweed inside the house overnight in airtight plastic bags.

It can then be kept in a cupboard for an extended time and used as seasoning in soups and stir-fries or ground and used as flour in pie crust, bread, or biscuits.

The vivacious Ms Carson welcomes visitors to the centre, at Portobello on the Otago Peninsula. The half-hour drive from central Dunedin, around the bays on the south shore of Otago Harbour, is well worthwhile, but if you cannot make it, here is the chip recipe:

Cut dried kelp into bite-size pieces. Pour a thin layer of olive oil on the bottom of the frying pan or wok. Toss the kelp in the oil and let it cook over a medium-high element for two or three minutes. Toss the seaweed continuously. Sprinkle with sesame seeds, honey, or sugar. When green and crispy, take off the heat and drain on a paper towel. Serve as you would potato chips. (A cold beer is optional.)

Ms Carson says all of the almost 1000 types of seaweed growing around New Zealand can be eaten, though some taste better than others. Seaweed is rich in vitamins, minerals, and proteins. However, it is also good at absorbing contamination, so never gather it in polluted waters.

While you are at the Portobello marine studies centre, visit the aquarium for a hands-on experience with a range of marine creatures. Although some, like the sharks, you may not want to touch.

To make a day of it, continue along the main road to the Taiaroa Head albatross colony and the yellow-eyed penguin conservation reserve. On the way back, take the high road from Portobello for magnificent views and maybe pop into Larnach Castle.

* Maps of the area are available from Tourism Dunedin's information office in the Octagon.

(c) The Christchurch Press, INL 2000.

Document thepre0020010818dw3e005m9

ASIAN KELP INVADES GOLEN BAY.

500 words
4 March 2000
New Zealand Press Association
English
(c) 2000 New Zealand Press Association

Nelson, March 4 - The discovery of the invasive Asian **kelp** undaria in Golden Bay has sparked fears it could one day turn Abel Tasman's pristine inter-tidal waters into a **kelp**-filled morass.

Moderate undaria infestations on marine farm structures off Collingwood, 135km north-west of Nelson, were confirmed in January by divers contracted to search for the underwater Japanese invader in a survey by Tasman District Council and the Department of Conservation.

The seaweed was found on 11 farms surveyed at Collingwood. The other nine Collingwood marine farms could not be surveyed at the time because of bad weather.

A search of Wainui Bay and associated marine farms and Port Tarkohe found no evidence of the invader.

Undaria crowds out other marine species and alters the ecological balance.

It is known for its rapid coastal colonisation and is already established in Nelson Haven and the Marlborough Sounds.

Nelson-Marlborough Conservation Board chairman Hugh Canard said undaria was the "gorse of the sea".

He said the establishment of the invasive weed was "almost inevitable" around New Zealand's coastline with the amount of foreign ships that came into national waters.

"If nothing is done it will spread around the coastline in 50 years, but if we make a stand it could take 200 years.

"We think it is a good idea to try to wipe out the Collingwood invasion, and if we can keep it out of Golden Bay we can form a kind of firebreak between Nelson and the West Coast."

Tasman District Council coastal resource scientist Eric Verstappen said the greatest fear was the possible spread of the invader to the high-value coastline of the Abel Tasman National Park.

"It can alter the natural character of a shoreline entirely and once a concentration has taken hold you need a bucketful of money and a focused effort to control it," Mr Verstappen said.

Mr Verstappen said it was thought the seaweed had been bought into Golden Bay with the transfer of marine farming equipment.

Department of Conservation marine specialist Andrew Baxter said if undaria spread to the rocky Abel Tasman coastline, it could have a huge impact on the shoreline's natural diversity.

The Golden Bay discovery has happened at a time when no national pest management strategy exists for the seaweed, although the Ministry of Fisheries is developing a strategy and an initial draft document is open for public submission.

A Government-funded and DOC managed \$2.1 million programme is underway to try to contain the seaweed in Stewart Island's Big Glory Bay and Bluff harbour.

Mr Baxter said a meeting of interested parties was to be held in the near future to discuss what could be done to contain the Golden Bay invasion.

Undaria was originally discovered in Wellington Harbour in 1987 after being accidentally introduced from Asia. It has since spread to every port along the east coast from Napier south.

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Document nzpa000020010816dw3400izp

SPREAD OF INVASIVE KELP WORRIES CONSERVATION AUTHORITIES.

513 words
15 February 2000
New Zealand Press Association
English
(c) 2000 New Zealand Press Association

Blenheim, Feb 15 - The invasive Japanese **kelp**, undaria, spreading around New Zealand's seashores, is becoming "the gorse of the sea", conservationists and marine farmers say.

Nelson/Marlborough Conservation Board member and Marine Farming Association executive officer Graeme Coates said today it was becoming increasingly important to make a stand against the weed.

And wherever the line was drawn, it was likely to be a long battle, he said.

Undaria was originally discovered in Wellington Harbour in 1987 after being accidentally introduced from Japan, Korea or China.

It has spread to every port along New Zealand's east coast, from Napier south.

The National government announced last year it would spend \$2.1 million trying to kill the weed.

At the same time, \$148,000 in Government science money was already being used by a private research centre in Marlborough to investigate the same seaweed, partly aimed to farming it for the dinner tables of Japan.

The Nelson-based Cawthron Institute, using funding from the Foundation for Research Science and Technology, has experimentally harvested crops of the seaweed in the Marlborough Sounds and Wellington Harbour.

The four-year study is due to finish this year.

Mr Coates said today if nothing was done about the problem it would spread right around the coastline of New Zealand within 50 years, but if a stand was made, it would take 200 years for it to spread.

"It's sort of like how do you get rid of gorse," he said. "You've just got to go out and gather it. I regard it as the gorse of the sea.

"How you do it and who carries the cost of doing it is a mind-boggling exercise."

Undaria could be taken into Abel Tasman National Park, northwest of Nelson, on the bottom of boats and ultimately clog up the park's coastline.

The weed appears to have already been spread to Golden Bay on marine farming equipment.

The bay was previously thought to be free of it and Nelson/Marlborough Conservation Board member Andy Dennis said he was keen to see it removed completely before it spread any further.

In a discussion document, prepared by the Cawthron Institute and released by the Fisheries Ministry, a number of options are presented for the control of undaria.

Control options range from doing nothing to stringent guidelines involving a cleansing regime for boats and marine equipment.

But institute scientists have been investigating the potential of farming the brown kelp, which grows up to 3m long, and in Japan is processed into a food called wakame, sold mainly in restaurants.

Undaria has been farmed in Japan since the 1950s, but Japan is running out of farm sites, has high labour costs and disease and pollution problems.

Japanese and Korean marine farms grow 400,000 tonnes of undaria a year, trade worth more than \$370 million a year.

Australian-grown undaria, harvested in the wild, sells in New Zealand, mainly to Japanese restaurants, for about \$7 for 100g.

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Document nzpa000020010816dw2f006r0

SCIENTISTS PROVE FISHING TALES TRUE.

417 words
16 June 1999
New Zealand Press Association
English
(c) 1999 New Zealand Press Association

Auckland, June 16 - Marine scientists have proved what many recreational fishers have long suspected - that a decline in snapper leads to an explosion of kina and the destruction of ecologically valuable **kelp** beds.

Dr Russell Babcock, a marine scientist at the University of Auckland, said he had proved the relationship during a five-year study in and around the Leigh Marine Reserve, north of Auckland.

Fishers in New Zealand and around the world had speculated since the 50s that loss of predatory fish, like snapper, led to the depletion of kelp beds and the decline of numerous other fish species.

Over-fishing of snapper left kelp-grazing urchins with few natural predators. An explosion of the hungry kina meant kelp forests were rapidly destroyed, an effect similar to clearfelling forests on land, he said.

While many countries suspected the connection, finding the proof was possible only in New Zealand because the country's 14 marine reserves had total bans on fishing.

Surveys by Auckland students of the Leigh reserve and Tawharanui Marine Park, 15km south, had shown up to eight times the number of snapper inside the reserves than in nearby non-reserve areas.

The study showed snapper in the reserves were larger, and samples of gut content confirmed that most fed on kina.

Dr Babcock said that since the Leigh reserve was established in 1978, areas of reef devoid of kelp or other algal growths had declined by 80 percent to just over 3 percent of the rocky reef area. This was because snapper, crayfish and other fish were more prone to feed on kina and urchins in the area.

The increase in kelp and algal growth had also increased other reef fish and inhabitants by 58 percent. "This shows that fishing has decreased the productivity of reefs on the east coast by between 40 and 50 percent," Dr Babcock said.

"More kelp means a more diverse ecosystem and a greater capacity for the system to support large predatory fish like snapper, which is the most actively sought after [by fishers] on this part of the coast."

The study reconfirmed the importance of marine reserves in managing coastal resources and protecting exploited species.

A spokeswoman for the Ministry of Fisheries said there had been no change to snapper quotas on Northland's east coast since June 1997 when Fisheries Minister John Luxton confirmed that snapper numbers were rebuilding and quotas would be reviewed in 2001.

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Document nzpa000020010908dv6g00m34

MARINE LIFE SURVEY UNDER WAY.

184 words
30 May 1999
New Zealand Press Association
English
(c) 1999 New Zealand Press Association

Auckland, May 30 - A survey of marine life on the rocks along Auckland's West Coast is under way.

A large scale die-off of bull **kelp** and harvesting of shellfish by beach-goers prompted the aerial survey along the coast from Muriwai to Whatipu.

Organisers say it should help determine the potential for marine protected areas, legally protected sites aimed at preserving marine animal and plant life and their habitats.

The helicopter conducting the survey is using sophisticated video surveillance equipment able to distinguish different shellfish. While the survey is a joint initiative between the Ministry of Fisheries, the Auckland Regional Council and the Department of Conservation, the technology could be applied to other areas around the New Zealand coast.

An ARC biologist, Brenda Greene, said it was hoped the survey would provide an analysis of shellfish abundance at inaccessible West Coast sites and shellfish at popular harvesting areas.

If shellfish appeared more common at the inaccessible sites and rare at the popular sites the data would show the impact of harvesting.

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Document nzpa000020010908dv5u00qy9

AERIAL SURVEY OF WILD WEST COAST MAY AID MARINE BIOLOGISTS.

398 words
21 May 1999
New Zealand Press Association
English
(c) 1999 New Zealand Press Association

Wellington, May 21 - Cameras mounted in helicopters and microlight aircraft are to be used to scrutinise the health of shellfish and bull **kelp** beds on Auckland's west coast shoreline.

Scientists intend to film the shoreline to show the distribution and abundance of marine organisms on the rocky shores and reefs - including a look at the health of bull **kelp** beds, recently hit by a big die-off.

The Fisheries Ministry, Auckland Regional Council and the Department of Conservation are working together on the study, which will use a helicopter to film along the coast from Muriwai to Whatipu.

The detailed coverage will be accurate enough to pick up such things as mussel beds, starfish, coverage of rocks by encrusting organisms and patterns of zonation from low to high tide.

Some sites have been previously monitored on the ground and will be used as a check on the aerial survey.

Local conservation groups will also use the aerial survey to identify potential sites for marine protected areas.

A fisheries policy analyst, Bob Drey, said new advances in technology had made the project possible - previously people on the ground took days to monitor individual reefs.

"This can be risky with the large surf that is usually present. Often monitoring results are inconclusive because it is impossible to determine what the `normal' or average state of these resources is."

Consultant marine biologist, Dr Roger Grace, had helped to pioneer aerial survey techniques using microlight aircraft to fly at low levels and speeds to photograph the intertidal zone.

A more recent development by a company called Heletranz had incorporated the use of helicopters combined with a gyro-stabilised, digital video camera system.

The project anticipated making use of both technologies, Mr Drey said.

The aerial survey would have to be on a day when the tide was low, about midday, and the water clear with only a light swell and winds. This did not happen too often on the rugged West Coast.

Mr Drey said that while the project was aimed at Auckland's wild and sometimes inaccessible west coast, there was no reason why the technology could not be applied to other situations.

"It may represent the start of a new era for marine research in New Zealand," Mr Drey said in a statement.

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Document nzpa000020010908dv5l00q81

BUREAUCRACY ALERT - Horrible greeblies in the water.

By ROD HOSKING.

159 words

5 February 1998

National Business Review

English

(c) 1998 The National Business Review

As of this week, the government has a strategy on ballast water. This is perhaps not as trivial or obscure as it may sound. More than 50 marine organisms have been introduced to New Zealand waters by way of ballast water discharged from ships from ships docking here, biosecurity minister John Luxton said this week in launching the strategy. "Overseas, some fisheries have been threatened by exotic marine species introduced from ballast water or from the residue of hull clearing operations," he said. Across in Tasmania, for example, the local shellfish industry is being heavily damaged by the northern pacific sea-star, introduced by discharged ballast water. Meanwhile in New Zealand, a **kelp** has infested Big Glory Bay in Stewart Island and the government is working on getting rid of it before it has a permanent effect on the ecology of the area.

(c) The National Business Review, 1998.

Document natbr00020010925du25001sn

STOWAWAY KELP SET TO EARN ITS KEEP.

By WARREN GAMBLE.

303 words

16 May 1997

New Zealand Herald

English

(c) 1997 The New Zealand Herald

WELLINGTON - Would you care for seaweed with that, sir?

It might not become a staple restaurant question, but an unwelcome, slimy visitor to New Zealand shores could end up on the country's dining-out tables.

And if an experimental crop produces the goods, the seaweed known as wakame or undaria could even be exported back to its country of origin, Japan.

Wakame is used as a salad vegetable in Japan, added to miso soup and in its dried form is used in a wide variety of instant foods. The dried form turns green and leafy when water is added.

The fast-growing brown kelp was accidentally introduced to New Zealand in ships' ballast water in the mid-1980s. Two varieties took hold in Wellington and Timaru, with the capital strain spreading up to Napier and down the east coast of the South Island.

The Nelson-based Cawthron Institute, using Government funding, has just successfully grown its first experimental crop in the Marlborough Sounds and is now refining the quality of the plants.

A senior institute scientist, Cameron Hay, said yesterday a high-quality crop would have domestic and export potential.

Australian-grown wakame, harvested in the wild, sells in New Zealand, mainly to Japanese restaurants, for about \$7 for 100g.

However, environmental groups are concerned about the spread of the seaweed and its impact on marine environments.

Last month the kelp was found in Stewart Island, leading to a Department of Conservation eradication campaign in an area that has its own unique native seaweed.

A spokesman for the Forest and Bird Protection Society, Barry Weeber, said the organisation had appealed to the Environment Court over a Marlborough District Court decision last year approving an undaria farm.

(c) The New Zealand Herald, 1997.

Document nzhd00020011002dt5g006jb