


# New Zealand Aquaculture Farm Facts



The integrity of flavour is incomparable — it is almost as if New Zealand products have absorbed the beauty of where they are from.

Tom Valenti, Chef/Owner, Quest Restaurant, New York

In the past 30 years aquaculture in New Zealand has grown from very small beginnings to a significant primary industry, currently estimated to be worth in excess of \$360 million, with a target goal of reaching \$1 billion in sales by 2025.

Isolated from heavily populated and polluted areas, the high quality of its natural environment, spectacular coastlines and water purity make New Zealand one of the most ideal countries for growing seafood. Seafood with the quality and flavour that is a true reflection of its pure source.

Satisfying the aspirations of the restaurant in London, the party in New York and the BBQ back home, the integrity of flavour and quality of our New Zealand aquaculture products is incomparable.



### **New Zealand Greenshell™ Mussels**

A species unique to New Zealand's pristine waters, these plump native shellfish combine a visually **stunning iridescent green shell with a mild flavour profile.**

New Zealand Greenshell™ Mussels are **grown 100% naturally and recognised as one of the top two environmentally friendly seafoods in the world by international conservation organisation, Blue Ocean Institute.** Fast becoming the world's most sought after shellfish, chefs worldwide are exploring the **culinary versatility** of the New Zealand Greenshell™ Mussel.



### **New Zealand King Salmon**

**New Zealand is the largest producer of farmed King Salmon,** otherwise known as Chinook. Raised within the pristine and clear waters of New Zealand, **farmers do not use antibiotics, growth promotants or vaccines** in their farming activities.

The **premium King Salmon variety is prized for its exceptional flavour, delicate texture and naturally high Omega-3 content.**

### **New Zealand Pacific Oysters**

The New Zealand Pacific Oyster offers a generous serving of **succulent plump meat** nestled within a deeply cupped shell, providing **a taste unique to New Zealand** and the individual growing areas in which they are cultivated.

Grown in nutrient-rich waters **regularly tested under a stringent monitoring programme, the high standard of water quality produces pure New Zealand Pacific Oysters approved by food safety officials to be consumed in a natural, raw state.**



## **Sustainability – promising rich harvests for our future generations**

New Zealand has a history of environmental guardianship and responsible management of its natural resources. New Zealand marine farmers follow best practices developed by the industry to meet the growing global demand for safe, healthy seafood products.

Species specific Environmental Codes of Practice direct best industry practices throughout the growing and harvesting cycle to minimise potential effects on the environment. The planning and approval process for coastal aquaculture in New Zealand considers the farm's potential environmental effects, as well as its possible cultural and social effects. To mitigate environmental impacts the New Zealand government has a number of environmental controls in place, including the Resource Management Act 1991 (RMA) and the Fisheries Act 1996.

Independent recognition of the New Zealand aquaculture sector's commitment to environmental sustainability has come from international conservation organisation Blue Ocean Institute, who have ranked New Zealand Greenshell™ Mussels as one of the top two 'eco-friendly' seafoods in the world.

## **Water Quality**

New Zealand operates one of the most stringent quality assurance programmes, testing both the shellfish and the water in which it grows. Water quality is rigorously and constantly monitored with testing carried out to specifications and standards set by the U.S Food and Drug Administration, European Union and NZ Food Safety Authority to ensure New Zealand Greenshell™ Mussels and Pacific Oysters are consistently of the highest standard. Under this stringent monitoring programme, no product can be harvested from farms without confirmation that water testing during the growing cycle, rainfall monitoring and product testing has declared it as safe.

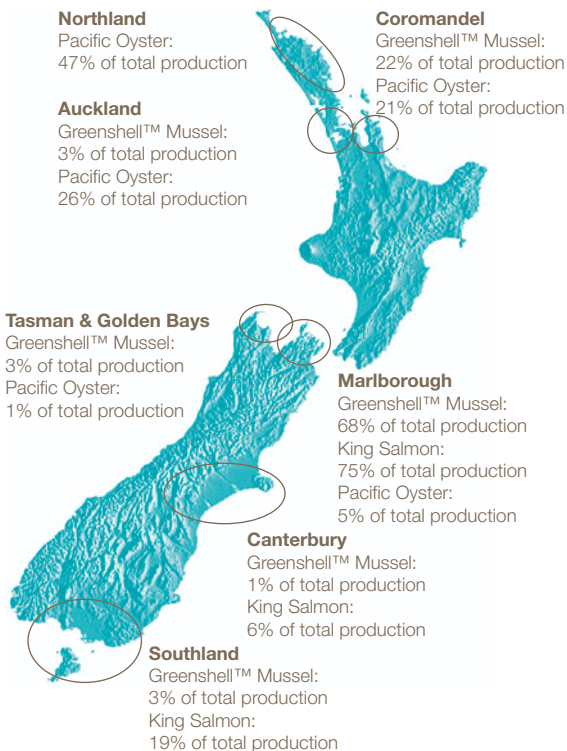
In New Zealand, site selection for the growing of King Salmon is based on a pristine and unpolluted rearing environment. Farms are strategically positioned in remote areas with strong tidal flow. The temperature and purity of the water is critical and the sun, wind and tides assist in cleaning the cages. Fish need a plentiful supply of well-oxygenated and unpolluted water. A good depth of water allows adequate space between net and seabed; a good water flow ensures a constant supply of dissolved oxygen and maintains the water quality.

New Zealand's water monitoring programmes are recognised on a global scale for their stringency and ensure that New Zealand Greenshell™ Mussels, King Salmon and Pacific Oysters are consistently of the highest quality standard.

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## Major Aquaculture Areas in New Zealand



Source: Aquaculture New Zealand Levy Production 2008

## Aquaculture in New Zealand

Aquaculture activities in New Zealand occupy only 0.02% of New Zealand's coastline.

Aquaculture takes place within about 15,800 hectares of allocated water space. Of this:

- 43% are near-shore sites.
- 57% are open-ocean sites.\*

\* Most of the open-ocean space is still in the early stages of development. Open-ocean aquaculture occurs in exposed sites which require more space between farm structures and different types of structures to those typically used. This limits stocking capacity, which means open-ocean aquaculture has a much lower yield per hectare than near-shore aquaculture.

Source: Ministry of Fisheries, Marine Farming Association.

### New Zealand Aquaculture Quick Facts

The Aquaculture sector is the fastest growing seafood sector.

The Food & Agriculture Organisation (FAO) predicts that global consumer demand for seafood will almost double from 45 to 85 million tonnes by 2015.

Aquaculture makes up approximately 20 percent of the total fisheries production in value and 15 percent of New Zealand's seafood exports by revenue.

Around 66 percent of New Zealand's aquaculture production is exported.

New Zealand's aquaculture produce is currently exported to 72 countries worldwide.

An industry drive, supported by government, for new species development is assisting the sector to move towards new, high value species and value added products with potential to be the future of aquaculture in New Zealand.

New Zealand is recognised as operating one of the strictest quality assurance programmes for shellfish in the world. New Zealand is also one of the few countries that does not use antibiotics, growth promotants or vaccines in Salmon farming practices.

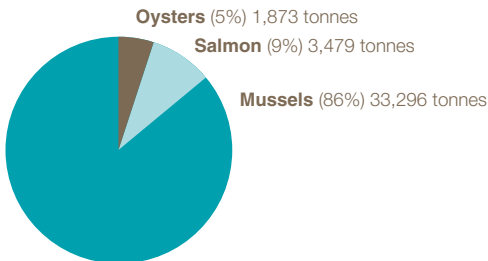
## New Zealand Aquaculture Export Statistics

Aquaculture exports in 2008 equated to NZ\$265 million (around US\$164 million). New Zealand had 72 active export markets in 2008 for Greenshell™ Mussel, Pacific Oyster and King Salmon products.

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### Proportion of aquaculture exports for 2008 by Volume

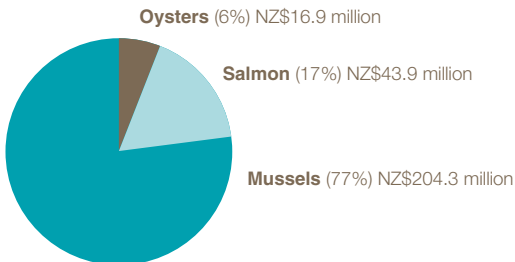
Source: New Zealand Seafood Industry Council Ltd



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### Proportion of aquaculture exports for 2008 by Value

Source: New Zealand Seafood Industry Council Ltd



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Note: Due to a lack of robust domestic consumption information being available for all of the three flagship species, a focus has been placed on presenting an analysis around the export statistics, which include official export figures that have been collected by New Zealand customs.



## New Zealand Greenshell™ Mussels

New Zealand Greenshell™ Mussels are easily recognised by their vibrant green and gold shell colouring, high meat-to-shell ratio, and valued for their large succulent tender meat. Their versatility in culinary applications make them a favourite with chefs and consumers around the world.

New Zealand Greenshell™ Mussels are a wealth of nutritional benefits, being low in fat, calories and cholesterol, and high in protein, iron and essential Omega-3 fatty acids. A 100 gram serving of New Zealand Greenshell™ Mussels will provide one quarter of an adults' daily protein needs. Furthermore, mussels are a particularly good source of haem iron (the iron from animals and the most easily absorbed iron form), containing over 3 times the haem iron of rump steak, on a per gram basis.

### New Zealand Greenshell™ Mussel Quick Facts

The scientific name for Greenshell™ Mussels is *Perna canaliculus*.

New Zealand Greenshell™ Mussels are a native New Zealand shellfish.

New Zealand Greenshell™ Mussels are the single largest seafood export with an export value of NZ\$204.3 million.

Mussels are filter feeders, meaning they literally filter their food from the sea by pumping the water through their gills. A typical mussel filters 360 litres or 95 U.S gallons of water each day.

Although no difference in quality or flavour, the colour of the mussel meat varies according to sex. The female is a deep apricot and the male, a soft cream.

New Zealand Greenshell™ Mussels can be grown to market size in 12-18 months from final seeding.

New Zealand Greenshell™ Mussels will grow in temperatures between 12 and 24°C, thriving most in temperatures between 16° to 19°C.

## New Zealand Greenshell™ Mussel Export Statistics

In 2008, New Zealand exported NZ\$204.3 million worth of Greenshell™ Mussels to the global market. The product was mainly exported in an Individually Quick Frozen (IQF) half shell format (84.05%), due to the convenience and versatility of preparing the mussel from this format. The largest market for New Zealand Greenshell™ Mussels in 2008 was the United States.

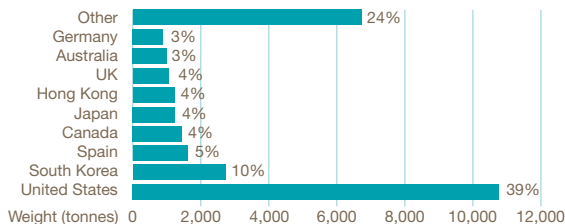
### New Zealand Greenshell™ Mussel exports 2008

Product category	Export Weight (kgs)	% of exports	% change on 2007 exports
Half Shell Frozen	27,990,138	84.05%	0.59%
Meat Frozen	2,906,762	8.73%	-1.20%
Whole Frozen	1,261,319	3.79%	0.56%
Preserved/Marinated	448,723	1.35%	0.06%
Live	430,337	1.29%	-0.10%
Freeze-dried Powder	201,447	0.61%	0.09%
Other not Live/Chilled/Frozen	20,311	0.06%	0.05%
Meat Chilled/Fresh	8,917	0.03%	-0.01%
Whole Chilled	7,323	0.02%	-0.04%
Smoked	6,528	0.02%	-0.02%
Processed in Can, Jar	6,484	0.02%	0.01%
Half Shell Fresh/Chilled	5,577	0.02%	0.00%
Powder in Capsule	2,132	0.01%	0.00%

Source: New Zealand Seafood Industry Council Ltd

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## Where do NZ Greenshell™ Mussel frozen half shell products go?



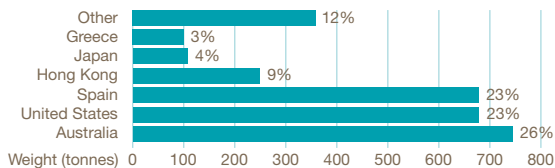
Total NZ Greenshell™ Mussels exported in a frozen half shell format for 2008 = 27,511 tonnes\*

\* Note. The 'Other' category includes 24 countries

1000kgs = 1 tonne or 2204.6 lbs = 1 tonne

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## Where do NZ Greenshell™ frozen mussel meat products go?



Total NZ Greenshell™ Mussels exported in a frozen meat format for 2008 = 2,907 tonnes\*

\* Note. The 'Other' category includes 33 countries

1000kgs = 1 tonne or 2204.6 lbs = 1 tonne

# New Zealand Pacific Oysters

The New Zealand Pacific Oyster offers a generous serving of succulent plump meat nestled within a deeply cupped shell, providing a taste unique to New Zealand and the individual growing areas.

Water quality is a distinct advantage that differentiates New Zealand Pacific Oysters, allowing them to be consumed in a natural raw as well as cooked format.

Pacific Oysters are low in fat and cholesterol and rich in vitamins, minerals and essential Omega-3 fatty acids. Oysters are a great natural source of zinc, where a 100g serving will supply more than 100 percent of an adults daily zinc requirement, essential for building a strong immune system.

## New Zealand Pacific Oyster Quick Facts

The scientific name for Pacific Oysters is *Crassostrea gigas*.

Pacific Oysters are filter feeders, and at an adult size (80-100mm in length) may filter up to 240 litres or 63 U.S gallons daily.

For best growth results, Pacific Oysters thrive in temperatures between 15 to 18°C.

In New Zealand, Pacific Oysters can be grown to market size (around 80-100mm) within 12–18 months.

Pacific Oysters may change sex more than once during their life span, usually spawning first as a male and subsequently as a female.

## New Zealand Pacific Oyster Export Statistics

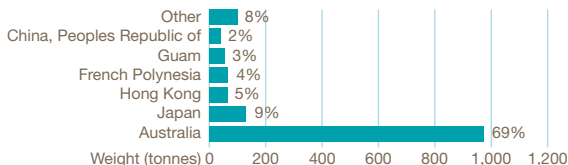
In 2008, NZ\$16.9 million worth of Pacific Oysters were exported to global markets. The majority of product was exported in an Individually Quick Frozen (IQF) half shell format (75.72%), with the largest market being Australia.

## New Zealand Pacific Oyster exports 2008

Product category	Export Weight (kgs)	% of exports	% change on 2007 exports
Oysters Frozen Half Shell	1,418,298	75.72%	-3.71%
Oysters Live Chilled	266,466	14.23%	2.04%
Oysters Chilled Half Shell	115,089	6.14%	0.87%
Oysters Frozen Meat	13,531	1.76%	0.71%
Oysters Frozen Whole	32,964	0.72%	-0.03%
Oysters Chilled Meat	13,314	0.71%	-0.12%
Oysters Chilled Whole	9,336	0.50%	0.22%
Oysters Other forms	1,865	0.12%	0.01%
Oysters prepared Can, Jar	2,312	0.10%	-0.01%

Source: New Zealand Seafood Industry Council Ltd

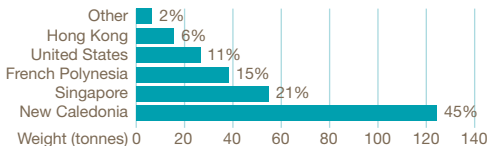
### Where do NZ Pacific Oyster frozen half shell products go?



Total NZ Pacific Oysters exported in a frozen half shell format for 2008 = 1,418 tonnes\*

\* Note. The 'Other' category includes 22 countries  
1000kgs = 1 tonne or 2204.6 lbs = 1 tonne

### Where do NZ Pacific Oyster chilled live products go?



Total NZ Pacific Oysters exported in a chilled live format for 2008 = 266 tonnes\*

\* Note. The 'Other' category includes 8 countries  
1000kgs = 1 tonne or 2204.6 lbs = 1 tonne

## New Zealand King Salmon

New Zealand King Salmon is prized for its attractive colour, firm texture and delicate rich flavour.

New Zealand King Salmon is a wealth of nutritional benefits, being:

- High in essential Omega-3 fatty acids with:  
150 grams (5.3oz) King Salmon =  
100% of the daily adult requirement of Omega 3.
- High in protein with:  
150 grams (5.3oz) King Salmon =  
70% of the daily adult requirement of protein.
- High in essential vitamins & minerals,  
including Vitamins B6 and B12, Magnesium,  
Phosphorus, Niacin and Selenium.

### New Zealand King Salmon Quick Facts

The scientific name for King Salmon (also known as Chinook) is *Oncorhynchus tshawytscha*.

New Zealand is the largest producer of farmed King Salmon in the world, where uniquely no antibiotics, growth promotants or vaccines are used in Salmon farming practices.

Temperature is an important factor in determining fish health and growth. King Salmon thrive in cooler waters and best growth is achieved at a temperature of 12-17°C.

King Salmon take around 12-18 months to grow in sea water. Depending on market requirements, the salmon are harvested at an average of approximately 3.5-4.0 kg.

King Salmon has the highest natural oil content of all salmon varieties – making it a rich source of healthy long-chain Omega-3s.

## New Zealand King Salmon Export Statistics

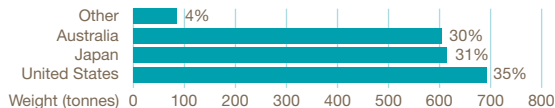
In 2008 New Zealand exported NZ\$43.9 million worth of King Salmon. A large majority of product was exported in a chilled whole format (57%), with the largest market being the United States followed closely by Japan and Australia.

### New Zealand King Salmon exports 2008

Product category	Export Weight (kgs)	% of exports	% change on 2007 exports
Chilled Whole	1,999,506	57.47%	-16.98%
Frozen Headed & Gutted	774,747	22.27%	10.23%
Processed Smoked	249,649	7.18%	-1.00%
Frozen Other form	116,264	3.34%	2.54%
Chilled Headed & Gutted	113,776	3.27%	3.01%
Frozen Whole	54,366	1.56%	0.09%
Frozen Fillets	54,019	1.55%	0.98%
Processed Cans, Jars Whole or in pieces	50,022	1.44%	0.41%
Chilled Fillets	38,862	1.12%	0.19%
Chilled Other form	20,979	0.60%	0.42%
Processed Cans, Jars Minced	5,604	0.16%	0.16%
Processed Other	1,383	0.04%	-0.05%

Source: New Zealand Seafood Industry Council Ltd

### Where do NZ King Salmon chilled whole product go?



Total NZ King Salmon exported in a chilled whole format for 2008 = 2,000 tonnes\*

\* Note. The 'Other' category includes 12 countries

1000kgs = 1 tonne or 2204.6 lbs = 1 tonne

## About Aquaculture New Zealand

Aquaculture New Zealand represents the interests of New Zealand's mussel, salmon and oyster industries. Launched in 2007 as a result of the New Zealand Aquaculture Strategy, the organisation is charged with the implementation of the 10 point plan paving the way to the goal of being a \$1billion industry by 2025.

Based in Nelson, Aquaculture New Zealand represents its stakeholders' interests within the areas of policy and advocacy, regional and Maori development, communications, education and food safety, as well as implementing market development and research strategies to further the transformational growth of the industry.

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