New Zealand Aquaculture

A sector overview
with key facts, statistics and trends.

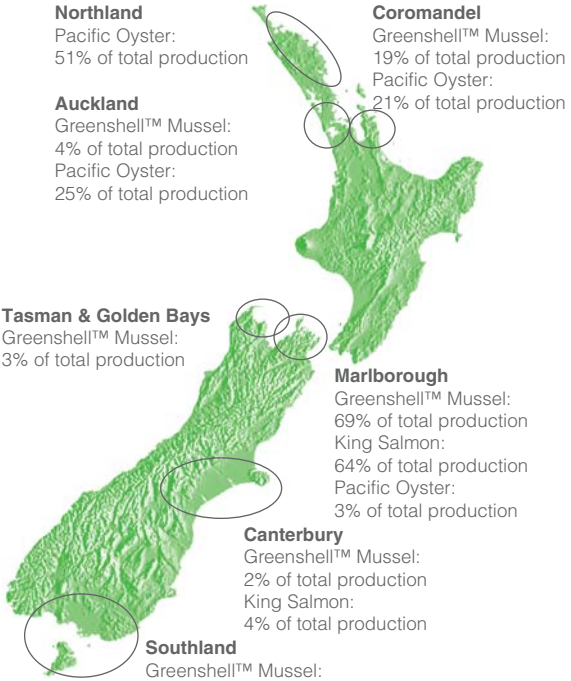
2012

In the past 40 years aquaculture in New Zealand has grown from very small beginnings to a significant primary industry, currently estimated to have a revenue in excess of $400 million, with a target goal of reaching $1 billion in sales by 2025.

Just as New Zealand's distinctive land creates outstanding wines, our seas nurture superb seafood. The natural purity of our water, our unique marine ecology and our small population unify to create seafood of unmatched quality and taste.

In today's hectic world people yearn for sensory experiences that can transport them to a place where nature rules supreme. The integrity of flavour and quality of our flagship aquaculture species including New Zealand Greenshell™ Mussels, King Salmon and Pacific Oysters deliver just that.

Major Aquaculture Areas in New Zealand



Source: Aquaculture New Zealand Levy Production 2011

Environmental Sustainability

New Zealand marine farmers continually push the boundaries of global best practice to meet the growing global demand for safe, healthy and environmentally sustainable seafood products. Species specific Environmental Codes of Practice direct best industry practices throughout growing and harvesting to minimise potential effects on the environment.

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 'eco-friendly' seafoods in the world.

Global Trust Certification Ltd have also recognised the world leading environmental practices in the farming of King Salmon in New Zealand. *"The New Zealand salmon industry achieves a first class rating amongst global producers. Born out of inherent resource based attributes displayed by the natural marine environment in combination with a highly dedicated, quality focused sector, New Zealand salmon is synonymous with the words healthy, pure and natural. Farms are compliant to one of the most robust regulatory frameworks in the world, developed through partnership and choice."*
Global Trust Certification Ltd.

Water Quality

New Zealand operates one of the strictest quality assurance programmes for shellfish in the world, 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. Under this stringent monitoring programme no shellfish 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.

Nature's Superfood

Packed with natural goodness, our products offer a wealth of nutritional benefits.

New Zealand Greenshell™ Mussels

New Zealand Greenshell™ Mussels are the ultimate health food. High in protein, low in fat yet providing 680mg of omega-3 from EPA and DHA in one serving. They are also a rich source of selenium, iron, Vitamin B12 and iodine, and a good source of magnesium and calcium.

Five New Zealand Greenshell™ Mussels provide almost 100% of your daily iodine and selenium needs, 1/3 of daily protein needs and almost three times your daily Vitamin B12 needs.

New Zealand's King Salmon

King (Chinook) Salmon has one of the highest natural oil contents of all salmon varieties. Containing high protein and very low sodium levels, King Salmon is also an excellent source of selenium, Vitamin B6, Vitamin B12 and Vitamin D.

One serving of King Salmon (110g raw) provides 2500 mg of EPA and DHA omega-3 fats which are essential for good health.

New Zealand Pacific Oysters

Pacific Oysters are rich in zinc, iron and Vitamin B12, with 5-6 oysters providing over three times your daily Vitamin B12, 100% of your daily zinc needs, 30% of daily iron needs and 1500mg of EPA and DHA omega-3 fats.

Pacific Oysters are also high in protein and an excellent source of copper, iodine, magnesium, selenium and Vitamin C, and a good source of Vitamin D.

Aquaculture in New Zealand

As of December 2011, aquaculture activities in New Zealand take place within approximately 19,268ha of allocated water space. Of this:

- 7,743 ha is granted to the aquaculture industry with the right to farm for a defined term, and is in known productive growing areas
- 8,960 ha are open-ocean sites where productivity is yet to be proven
- 1,195 ha are near shore sites yet to be developed
- 1,370 ha is undeveloped space in interim AMA's

Source: Fish Farm Register, Ministry of Fisheries

Aquaculture Trends & Information

The aquaculture sector is the fastest growing animal protein producing sector.

The Food & Agriculture Organization (FAO) estimates that global aquaculture production will continue to increase, reaching nearly 74 million tonnes in 2020.

The growth in global fish protein consumption to 2020 will be from emerging economies.

An industry drive, supported by government, is assisting the sector to move towards higher value propositions that promise to be the future of aquaculture in New Zealand.

Sustainable aquaculture makes a significant contribution to New Zealand's economy. Currently offering employment to over 3,000 people, this figure is expected to increase in the coming years.

New Zealand Aquaculture Statistics

Production and revenue metrics for 2011

	Mussels	Salmon	Oysters
Harvested product (greenweight tonnage)	101,311	14,037	1,804
Export revenue NZ$ (millions)	218.1	63.4	16.6
Domestic revenue NZ$ (millions) (estimated)	35.0	65.0	8.0

Due to a lack of robust domestic consumption information being available for the three species, a focus has been placed on presenting an analysis around the export statistics. These are official export figures collected by New Zealand Customs. All export revenue information is reported in FoB (Free on Board) pricing.

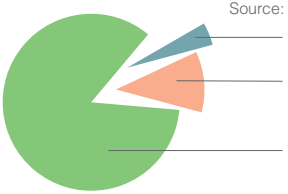
New Zealand Aquaculture Exports

Aquaculture exports in 2011 equated to NZ$298 million.

New Zealand had 79 active export markets in 2011 for Greenshell™ Mussels, Pacific Oysters and King Salmon.

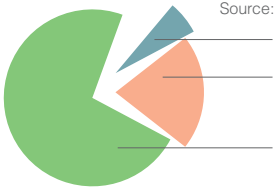
Proportion of aquaculture exports for 2011 by Volume

Source: New Zealand Seafood Exports 2011

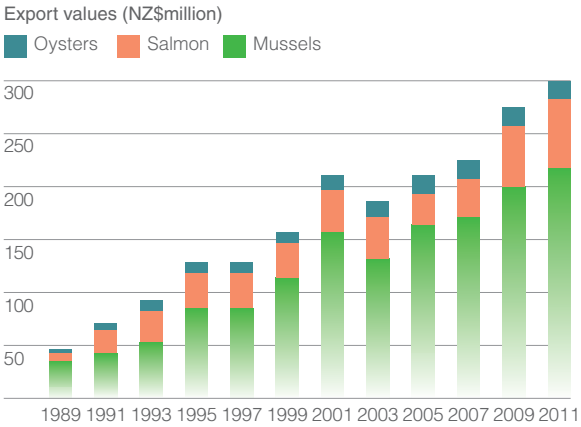


Proportion of aquaculture exports for 2011 by Value

Source: New Zealand Seafood Exports 2011



Aquaculture exports over time



Source: New Zealand Seafood Exports

New Zealand Greenshell™ Mussels

New Zealand Greenshell™ Mussels

New Zealand's isolation makes it a natural home for many unique species. One of the most sought after by seafood lovers the world over, is New Zealand Greenshell™ Mussels.

Nurtured in the clear, sunlit waters around New Zealand's unspoiled coastline, these mussels thrive on a constant flow of nutrients. Under careful stewardship, they mature into plump, full-flavoured mussels that lend themselves to numerous styles of international cuisine.

From appealing finger-food to succulent main-meal occasions, New Zealand Greenshell™ Mussels are masters of versatility. They are healthy, satisfying and easy to prepare.

In many cases, we snap-freeze them to capture all the fresh flavour and the nutritional value they had as they emerged from the water.

In New Zealand we owe a lot to nature, therefore we are careful to preserve our natural gifts. Hence our insistence on world leading water quality management and other key environmental benchmarks. We are acutely aware that the world wants food that not only tastes wonderful but carries with it firm assurances around food integrity.

In all these respects, New Zealand Greenshell™ Mussels shine as rare and precious culinary gems from the South Pacific.

New Zealand Greenshell™ Mussel Quick Facts

New Zealand Greenshell™ Mussels (*Perna canaliculus*) are a native New Zealand shellfish.

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.

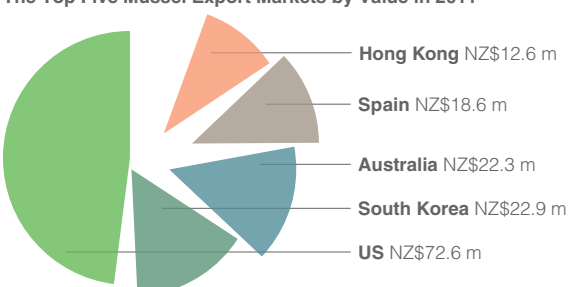
New Zealand Greenshell™ Mussels will grow in temperatures between 12° - 24°C, thriving most in temperatures between 16° - 19°C (61°F - 66°F).

New Zealand Greenshell™ Mussel Export Statistics

New Zealand Greenshell™ Mussels were exported to 78 countries in 2011.

The predominant Greenshell™ Mussel product exported by the industry is the IQF (individually quick frozen) half shell format. In 2011, 83% (37,871 tonnes) of mussels were exported in this IQF format.

The Top Five Mussel Export Markets by Value in 2011



New Zealand Greenshell™ Mussel exports 2011

Product category	Export weight (kgs)	% of exports
Half Shell Frozen	31,871,216	83.55%
Meat Frozen	3,710,374	9.72%
Whole Frozen	1,388,032	3.64%
Preserved/Marinated	490,252	1.29%
Freeze-dried Powder	251,928	0.66%
Live	248,428	0.65%
Processed in Can, Jar	82,508	0.22%
Other not Live/Chilled/Frozen	30,345	0.08%
Powder in capsule	25,74	0.07%
Whole Chilled	15,030	0.04%
Smoked	10,464	0.03%
Crumbed, battered	8,060	0.02%
Meat Chilled/Fresh	6,923	0.02%
Half Shell Fresh/Chilled	3,756	0.01%

Source: New Zealand Seafood Exports 2011

New Zealand Pacific Oysters

New Zealand Pacific Oysters

No other food reflects its origins as swiftly and sensually as an oyster to its seaborne home. When that home happens to be in New Zealand's unspoiled coastal waters and the oyster is a New Zealand Pacific Oyster, that pleasurable experience is only accentuated.

The unique characteristics of our pure underwater environment and distinctive marine ecology impart a clean flavour profile and full-bodied texture to our Pacific Oysters. Taste experiences appreciated and recalled by oyster lovers everywhere.

We often snap-freeze our raw oysters immediately at harvest to ensure consumers around the world can enjoy them at their peak of flavour and nutritional value. They have the same taste sensation as non-frozen raw oysters but have the added benefit of greater convenience. No small consideration in this time-pressured world.

Consumers of New Zealand Pacific Oysters can be confident that what they are enjoying won't be compromised in any way by safety concerns. New Zealand takes pride in maintaining the strictest quality assurance programme in the world. While most countries test either the shellfish or the immediate seawater environment, New Zealand rigorously and regularly tests both. The impact of all these measures mean that New Zealand Pacific Oysters can be fully appreciated worldwide in their natural raw state.

New Zealand Pacific Oyster Quick Facts

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

Pacific Oysters are filter feeders, and at 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° - 18°C (59°F - 64°F).

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

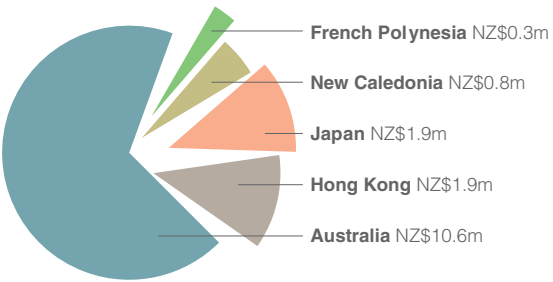
Pacific Oysters may change sex more than once during their life span, usually spawning first as a male and subsequently as a female.

New Zealand Pacific Oyster Export Statistics

In 2011 New Zealand Pacific Oysters were exported into 24 countries.

The predominant Pacific Oyster product exported by the industry is the IQF (individually quick frozen) half shell format. In 2011, 87% (1,454 tonnes) of Pacific Oysters were exported in this IQF format.

The Top Five Oyster Export Markets by Value in 2011



New Zealand Pacific Oyster exports 2011

Product category	Export weight (kgs)	% of exports
Oysters Frozen Half Shell	1,453,530	87.21%
Oysters Chilled Half Shell	74,633	4.48%
Oysters Chilled Whole	68,289	4.16%
Oysters Live Chilled	48,900	2.93%
Oysters Frozen Whole	9,350	0.56%
Oysters Chilled Meat	5,170	0.31%
Oysters Frozen Meat	4,130	0.25%
Oysters Other forms	1,028	0.06%
Oysters prepared can, jar	589	0.04%

Source: New Zealand Seafood Exports 2011

New Zealand's King Salmon

New Zealand's King Salmon

The surest way to produce superb eating salmon is to raise them in natural surroundings where the water is pure and food safety is assured.

New Zealand's remote waters, meticulous farming practices and our strict bio-security procedures mean that we produce our salmon in the most healthy and environmentally sustainable manner with complete product integrity.

Of course, it also helps when you start out with a species as desirable as King Salmon. New Zealand's King Salmon offers an exceptional taste, the result of a premium breed of salmon with a marbled meat that holds structure and presents a succulent depth of flavour and is often described as being the wagyu of salmon.

As the world's largest supplier of this impressive species, New Zealand is able to offer consistent supplies of quality King Salmon to its international clientele.

For consumers who appreciate excellent taste in their salmon but also like to know it comes from a sustainable source and offers product integrity, New Zealand's King Salmon is the salmon of choice.

New Zealand's King Salmon Quick Facts

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

Aquaculture is considered one of the world's most efficient forms of animal protein production. King Salmon farmed in New Zealand are net marine protein producers - the small amount of fish protein in their diet is sourced from independently certified sustainable fisheries.

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 (54°F - 63°F).

King Salmon take around 17 months to grow to market size. Depending on market requirements, the salmon are harvested at an average of approximately 3.5-4.0 kg.

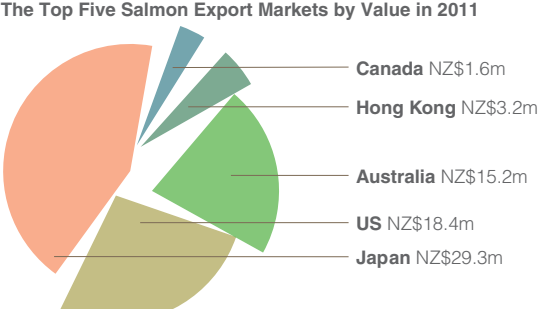
King Salmon has the highest natural oil content of all salmon varieties – making it a rich source of healthy long-chain Omega-3s.

New Zealand's King Salmon Export Statistics

New Zealand's King Salmon was exported to 30 countries in 2011.

The predominant King Salmon product formats exported by the industry are chilled whole and frozen headed & gutted. In 2011, 47% (2,420 tonnes) of salmon was exported in a chilled whole format with 30% (1,544 tonnes) exported in a frozen headed & gutted format.

The Top Five Salmon Export Markets by Value in 2011



New Zealand's King Salmon exports 2011

Product category	Export Weight (kgs)	% of exports
Chilled Whole	2,419,785	46.84%
Frozen Headed & Gutted	1,544,401	29.89%
Frozen Fillets	544,823	10.55%
Processed Smoked	160,195	3.10%
Frozen Other form	159,901	3.10%
Chilled Headed & Gutted	126,503	2.51%
Chilled Fillets	75,274	1.46%
Chilled Other form	49,568	0.96%
Processed Cans, Jars, Whole or in pieces	47,256	0.91%
Frozen Whole	34,446	0.67%
Processed Cans, jars minced	682	0.01%

Source: New Zealand Seafood Exports 2011

About Aquaculture New Zealand

Aquaculture New Zealand represents the interests of New Zealand's mussel, salmon and oyster sectors and is charged with the implementation of the New Zealand Aquaculture Strategy, paving the way to the goal of being a $1billion industry by 2025.

Guiding principles of the New Zealand Aquaculture Strategy:

- The strategy is market-driven, industry-led, commercially viable and sector wide.
- It requires the collective action of industry participants.
- Growth will be driven by innovations in existing and new space, species, products and markets.
- Growth will take place within an environmentally sustainable framework.
- The strategy will be implemented through a partnership between industry and government, communities, Māori, regions and research/education/training providers.

Aquaculture New Zealand is a levy funded industry body within the mandate of the Aquaculture New Zealand Commodity Levy. It is governed by a Board of Directors made up of industry, Māori and regional representatives elected by industry shareholders.

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New Zealand Greenshell™ Mussels

The New Zealand Greenshell™ Mussel is a unique treasure. Each brilliantly coloured shell protects a succulent and generous mussel. Its versatile flavour profile rewards the adventurous chef with unique culinary possibilities.

New Zealand's King Salmon

New Zealand's King Salmon offers an exceptional taste and textural experience, the result of a premium breed of salmon with a marbled meat that holds structure and presents a succulent depth of flavour.

New Zealand Pacific Oysters

The sensual flavours of New Zealand Pacific Oysters reflect the pure waters they are grown in. Sumptuously textured, these delicacies are the height of indulgence.

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