

Ocean, Climate and Us!

Ocean Spirit
Te Wairua O Te Moananui

**How our Relationship with the Ocean
Will Determine our Future!**

**Climate – the moist sigh of
our mother’s breath as she basks
in the warmth of the sun**

**Climate Breakdown – the inevitable consequence
when our mother’s breath is disturbed**

The Ocean's Role

Respiration

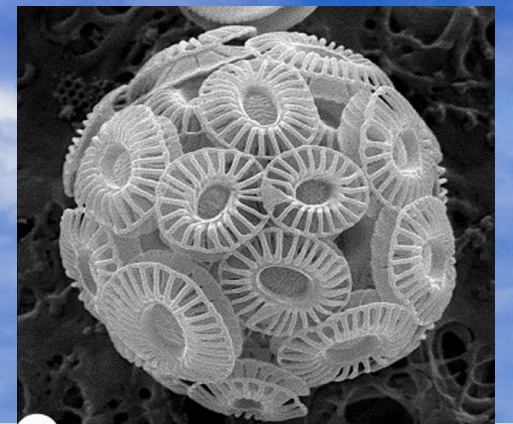
Circulation

Metabolism

= Ocean Physiology

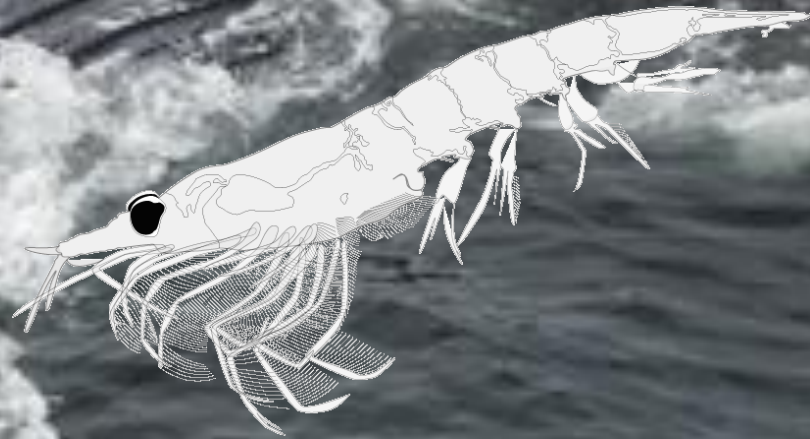
The Ocean's Breath

Ocean Spirit
Te Wairua O Te Moananui



Pumping Iron

Ocean Spirit
Te Wairua O Te Moananui





THE TOXIC WAVE

Whoever you are and wherever you live, there is no safe haven from the toxic wave of chemical pollution.

Start of toxic chemical pollution

1940s

With DDT

2010

Plankton 40% drop between 1950 and 2010

(Dalhousie University, Nature Volume 466, pages 591-596, 2010)

2012

NASA satellite images Plankton **dropping** at **1% year on year**

(Measurements since 1997)

2018

90% of all large fish gone, remaining ones are toxic, mercury and PCBs

2025

Wales, seals and birds **populations** start to **crash**

2030

25% of all remaining fish can no longer reproduce, loss of habitat

2030

90% of coral dead

2025

75% of coral dead

2018

25% of coral dead

2045

Ocean pH 7.9
Cascade collapse of Ocean Ecosystem

2050

Most whales, birds, seals and fish die. Oceans turn toxic with Cyanobacteria and dinoflagellates. **Run-away climate change**. Terrestrial ecosystem starts to fail. Point of no return for all life on Earth.

It is a grim road map towards catastrophic ocean system breakdown in 25 years. Because all pollution eventually ends up in the Oceans.

An underwater photograph showing a dense field of sea grasses, identified as Zostera muelleri. The grasses are long, thin, and green, growing in a sandy or silty seabed. The water is clear, and the lighting is bright, suggesting a shallow depth. The text 'Sea Grass - Rimurēhia' and 'Zostera muelleri' is overlaid in white on the left side of the image.

Sea Grass - Rimurēhia
Zostera muelleri

Ocean Spirit
Te Wairua O Te Moananui

Mangroves - Manawa

Ocean Spirit
Te Wairua O Te Moananui





Kelp forests

Ocean Spirit
Te Wairua O Te Moananui

Unhealthy Ocean ...

‘It is a curious situation that the sea, from which all life arose, should now be threatened by the activities of one form of that life.’

But the sea, though changed in a sinister way, will continue to exist: the threat is rather to life itself.’

Rachel Carson

Ocean Spirit

Te Wairua O Te Moananui

**Healthy Ocean
Healthy Climate
Healthy Life!**



Towards Regenerative Ocean Practice

Ocean Spirit
Te Wairua O Te Moananui



Te Whanga Hauora o Tutukaka

Ocean Spirit
Te Wairua O Te Moananui

Ki Uta Ki Tai Vision 2030

Restoring the mauri of Tutukaka Harbour to a vibrant and healthy state where kelp forests flourish, marine life abounds and our communities thrive.

A Community-based, collaborative regeneration and research project

Photo courtesy of Scott Gundersen

Wai repo Moemoeā

Ocean Spirit
Te Wairua O Te Moananui

*Re-establishing a natural coastal wetland
and incorporating regenerative agriculture
to create a wetland food forest.*

Wai repo Moemoeā

Ocean Spirit
Te Wairua O Te Moananui



Regenerating the kelp forests In Tutukaka Harbour

Regenerating the Kelp Forests of Tutukaka

Green Gravel

Ocean Spirit
Te Wairua O Te Moananui





Beau Masters
Research Officer

Ella Lis
MSc student

Associate Professor
David Aguirre

Photo credit: Irene Middleton

Zoology and Ecology School of Natural Sciences
Massey University, Albany Campus

Kina Removal

Ocean Spirit
Te Wairua O Te Moananui



Our first “planting”

Ocean Spirit
Te Wairua O Te Moananui



Cyclone Gabrielle

Ocean Spirit
Te Wairua O Te Moananui



Our second planting

Ocean Spirit
Te Wairua O Te Moananui



An underwater scene featuring a large school of small fish swimming in the upper half of the frame. In the lower half, there is a dense field of green seaweed. A larger fish is visible in the center-left. The overall color palette is dominated by blues and greens.

Ocean Spirit

Te Wairua O Te Moananui

OUR VISION

***A healthy moana in which coastal ecosystems and human communities thrive
in a harmonious, respectful and mutually beneficial relationship.***