

HAURAKI GULF MARINE PARK SEMINAR 2019

State of the Hauraki Gulf ... a global microcosm

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followed by Daniel Hikuroa, University of Auckland



Hauraki Gulf Forum

Tikapa Moana

Te Moananui a Toi



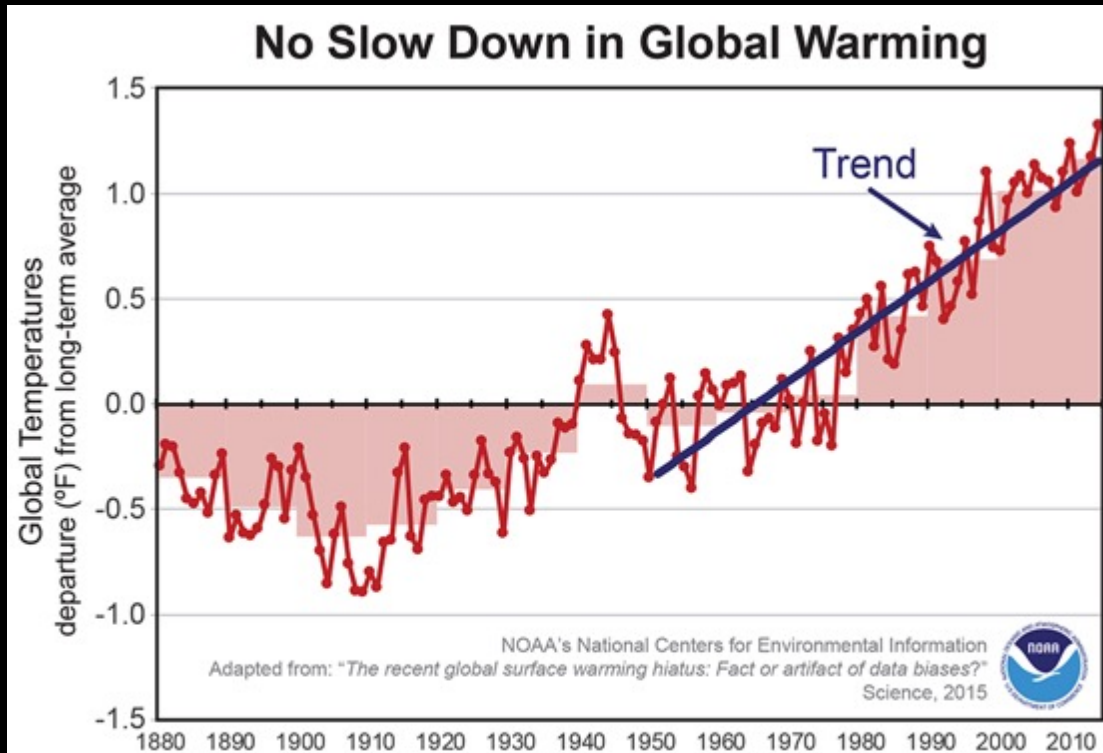
TĀMAKI PAENGA HIRA

AUCKLAND WAR MEMORIAL MUSEUM

In conversation with my scientific peers ...

- Climate change
- Biodiversity crisis

Climate change



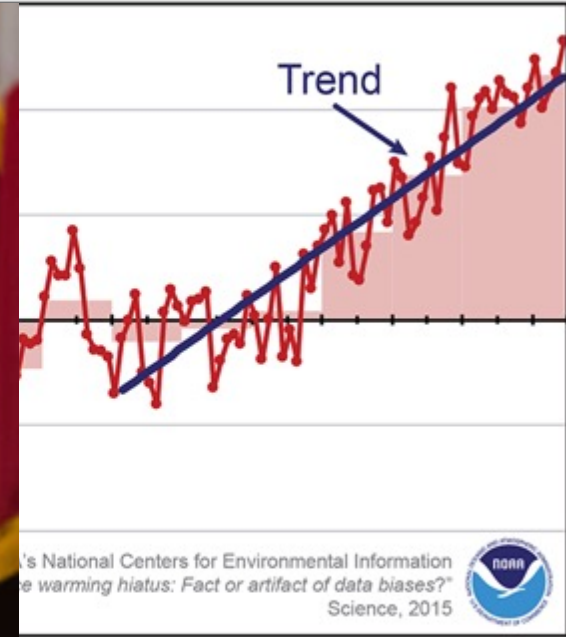
Contrary to much recent discussion, the latest corrected analysis shows that the rate of global warming has continued, and there has been no slow down.

Climate change

No Slow Down in Global Warming

CLIMATE CHANGE?

DEFINITELY A HOAX



latest corrected analysis shows that the rate of warming has not slowed, and there has been no slow down.

Climate change

CLIMATE CHANGE?



Biodiversity and **Biomass** crisis

Only 4% (by weight) of the planet's mammals are wild—we and our livestock and pets make up the other 96%.

The weight of our poultry is about three times greater than the weight of all the world's wild birds.

By 2050, plastic in the ocean will weigh more than wild fish.

State of Hauraki Gulf

Environmental indicators:

- | | |
|--|--|
| 1. Fishing | 7. Non-indigenous marine species |
| 2. Toxic chemicals | 8. Harmful algae, pathogens and mass mortalities |
| 3. Sediment and benthic health. | 9. Marine litter |
| 4. Mangroves [†] | 10. Maintenance and recovery of biodiversity |
| 5. Nutrients | 11. Coastal development |
| 6. Microbiological contamination (pathogens) | |



Figure 4.1: The Hauraki Gulf / Tīkapa Moana / Te Moana-nui-a-Toi and its catchment.

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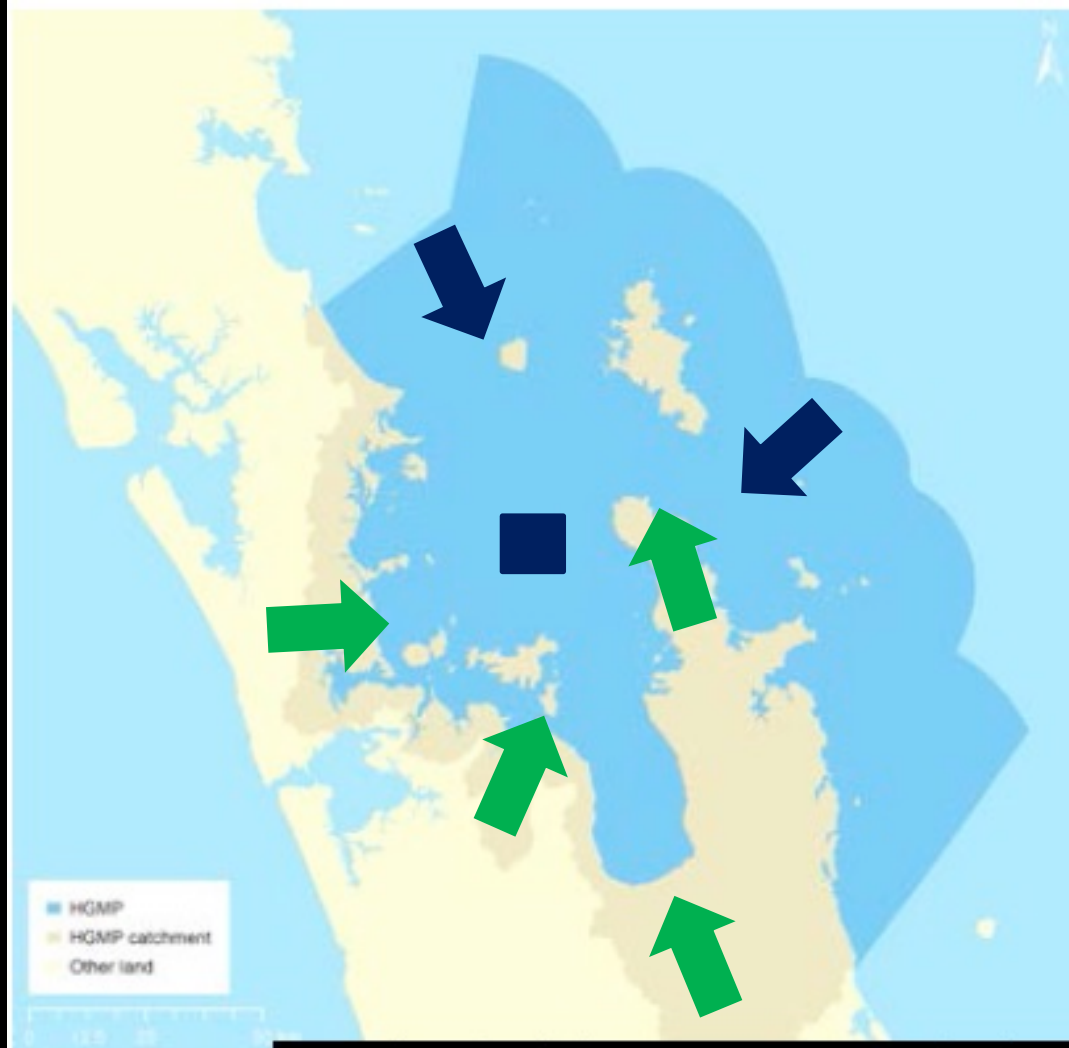


Figure 4.1: The Hauraki Gulf / Tīkapa Moana / Te Moana-nui-a-Toi and its catchment.

Shifting baselines

HOW MUCH CAN YOU CATCH FROM A DAY OF FISHING?

Decades of photographs from Key West, Florida, document the declining size and abundance of fish. On a typical day in the 1950s, a sport fisher could expect to snare several groupers longer than he or she was tall. Fifty years later, the biggest "prize" fish was a little over a foot long.

Photographs courtesy of Monroe Public Library

1950s:

Giant groupers dominate the catch. Smaller specimens are not worth keeping.



1960s & 1970s:

The biggest fish are no longer bigger than the fishermen.



1980s:

Giant grouper are gone. Snappers and smaller fish abound.

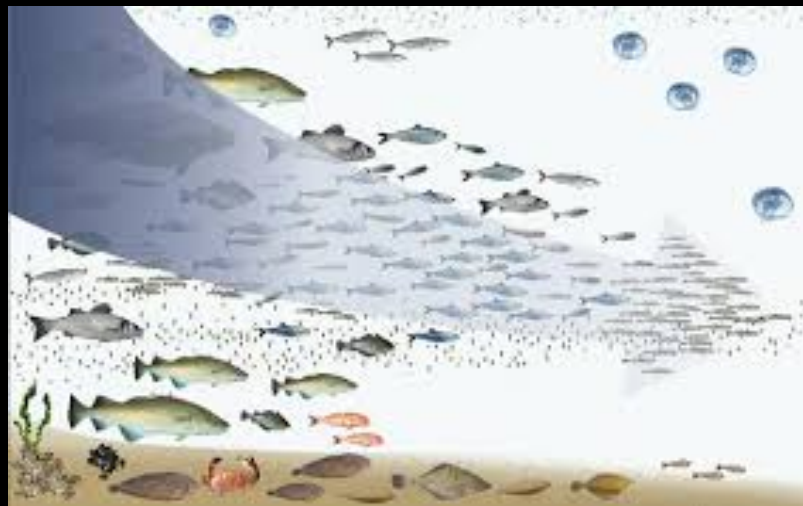


2000s:

The average catch is usually no longer than a foot.



Source: McLENACHAN, L. (2009). Documenting Loss of Large Trophy Fish from the Florida Keys with Historical Photography. Conservation Biology, 23: 430-443.



Source: McLenachan 2009 Conservation Biology 23 / Daniel Pauly

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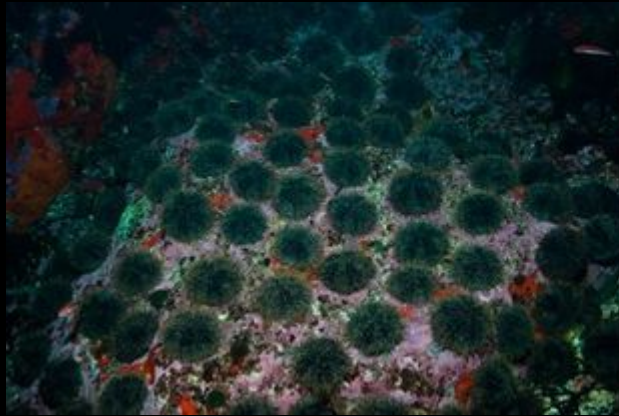


Source: McJENACHAN, L. (2009). Documenting Loss of Large Tropic Fish from the Florida Keys with Historical Photography. Conservation Biology, 23: 436-443.



Fig. 6 The Florence Kennedy II, a popular Auckland charter boat, returns to port in 1958 with over 3000 snapper caught by 48 anglers in a 4-h fishing trip in the Hauraki Gulf, New Zealand.

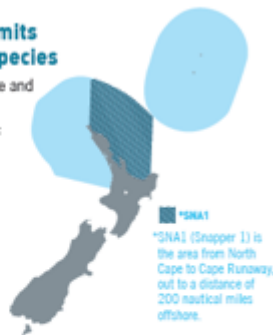
Shifting baselines



Daily size and bag limits for popular finfish species

This is a summary of daily size and bag limits for popular finfish species in the following areas:

- Auckland
- Northland
- Waikato
- Coromandel
- Bay of Plenty
- Kermadec Islands.



How to measure your finfish

Measure from the tip of the nose to the end of the middle ray of "V" in the tail.



Popular finfish sizes and limits

Combined daily bag limit (CDBL) fish

These fish are part of the combined daily bag limit. This means you cannot exceed a **total** catch of 20 of any combination of the following species that are part of this bag limit.

Tarakihi



Gurnard/Kumu, Kumukumu



Kahawai



John Dory/Kuparu



Trevally/Araara

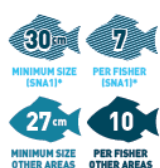


Bluenose/Matiri



In addition you may also take the following

Snapper/Karati/āmure



Kingfish/Haku



Hāpuku/Whāpuku



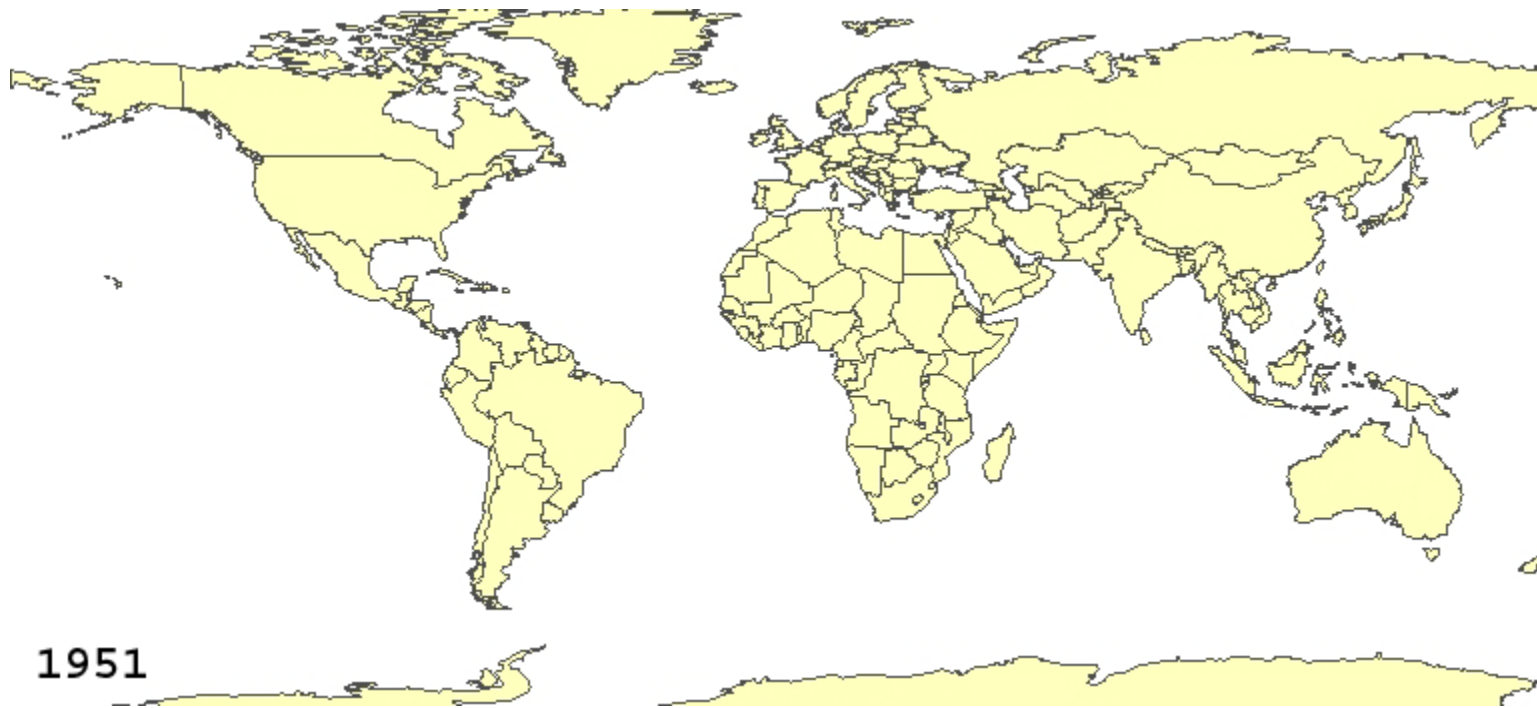
5

Daily combined bag limit of 5 with no more than 3 Kingfish included



In the Hauraki Gulf,
recreational catch likely
exceeds commercial catch

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Unsustainable?

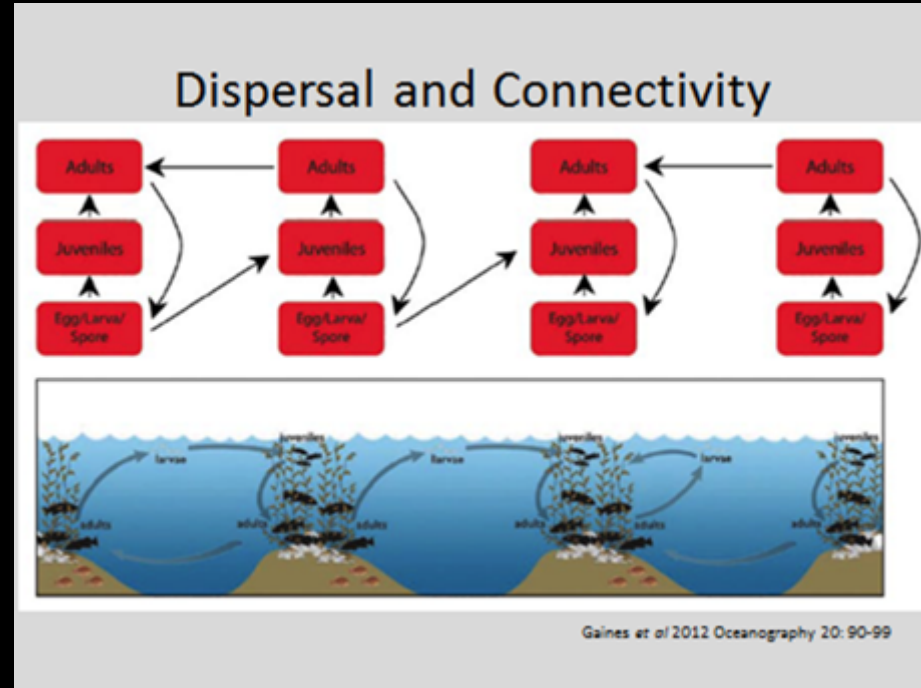
- Snapper
- Rock lobster
- Tarakihi



Tragedy of the commons



Marine reserves

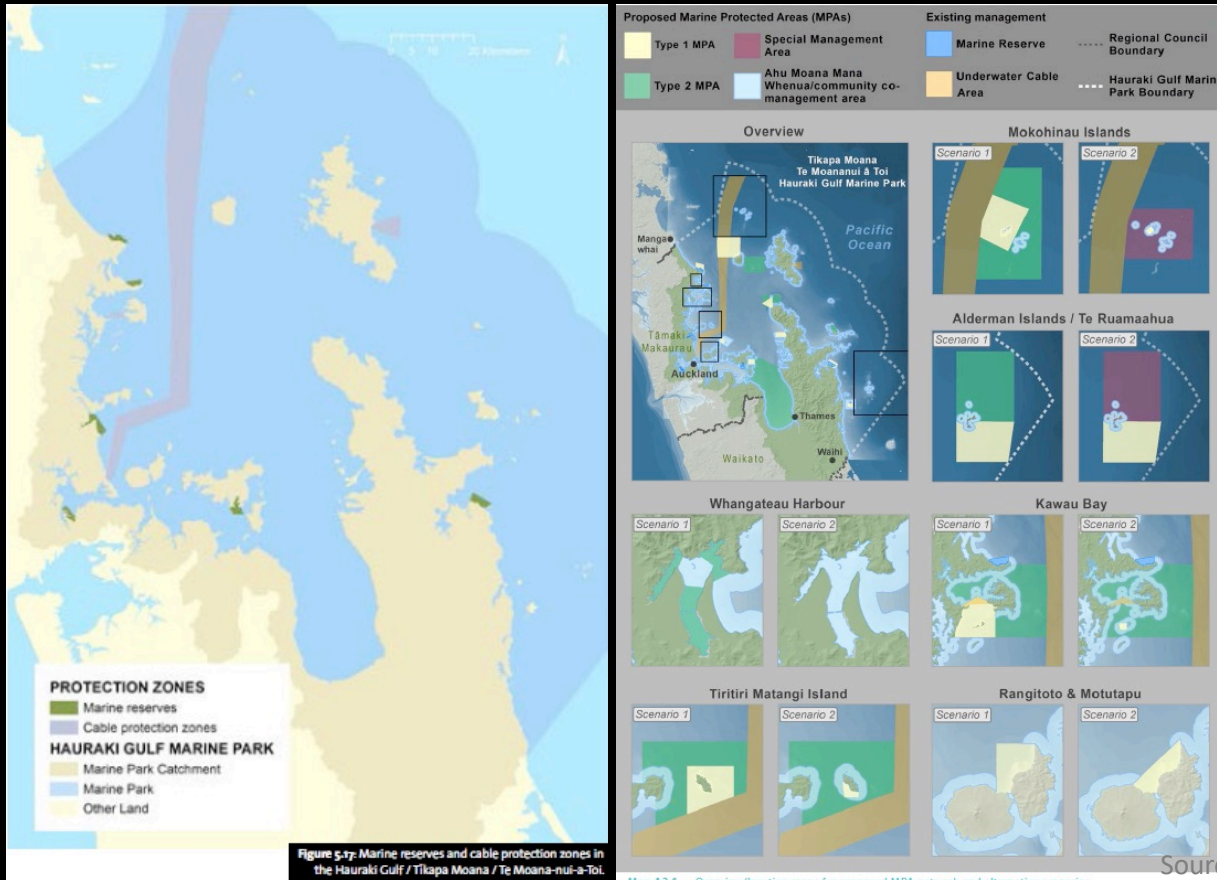


Marine reserves



Figure 5.17: Marine reserves and cable protection zones in the Hauraki Gulf / Tīkapa Moana / Te Moana-nui-a-Toi.

Marine reserves



20% target by HGF
30% science recommendation

Models:
No take MPAs
Limited take MPAs
Rāhui
Dynamic rāhui
Mātaitai
Taiāpure

Small steps toward restoration of the Hauraki Gulf

Okahu Bay



Small steps toward restoration of the Hauraki Gulf

**Boats removed from Okahu Bay:
'The mauri has been restored'**



Small steps toward restoration of the Hauraki Gulf

Noises Islands

Predator free



Small steps toward restoration of the Hauraki Gulf

Noises Islands

Recreational fishing
Scallop dredging
Coastal gathering



Small steps toward restoration of the Hauraki Gulf

Noises Islands

Weed removal

Seabird recovery

Marine habitat recovery



Figure 22: Examples of dog cockle (*Tucetona laticostata*) habitat from the Noises Islands, inner Hauraki Gulf. a) surface of a dog cockle bed with dead shell, b) close-up of dead shell lying on sediment surface (note also presence of rhodoliths), c) mixture of dead dog cockles, and live scallop and horse mussel. (Source: S. Dewas, AUT University).

Small steps toward restoration of the Hauraki Gulf

Noises Islands

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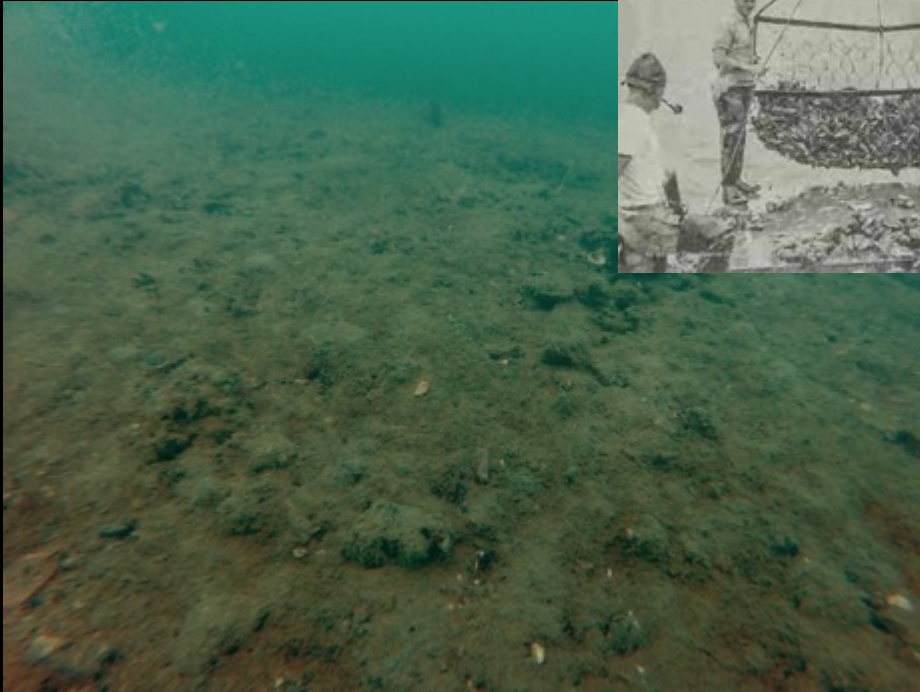
Small steps toward restoration of the Hauraki Gulf



Small steps toward restoration of the Hauraki Gulf



Small steps toward restoration of the Hauraki Gulf



Source: Shaun Lee



Source: U. Auckland

Small steps toward restoration of the Hauraki Gulf

Shellfish recovery



Small steps toward restoration of the Hauraki Gulf

Shellfish recovery



Small steps toward restoration of the Hauraki Gulf

Led by:

Community groups

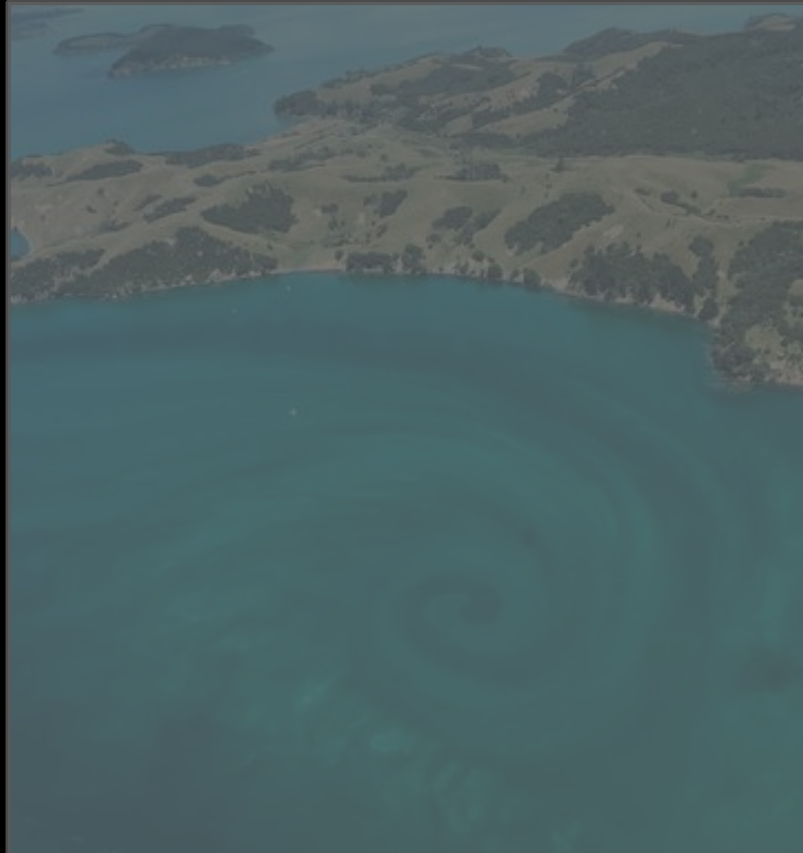
Private landowners

Iwi



What?

Where?



What?

Where?



How?

A connected approach

