

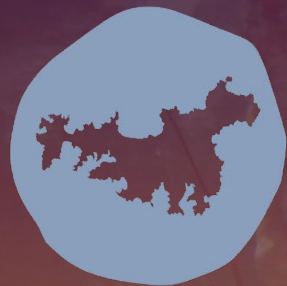
Assessment of Kōura on Waiheke Island May/June 2022



WAIHEKE
MARINE PROJECT

WAIHEKE KI UTA WAIHEKE KI TAI WAIHEKE KI TUA

- Kaupapa: Waiheke Marine Project
- Ko wai mātou / Who are we?
- Akoranga o mātou / What we are learning
- Ki tua / Future possibilities
- Whakaminamina / Mingle
- He pātai/ Questions
- Whakakapinga / Wrap up



WAIHEKE MARINE PROJECT

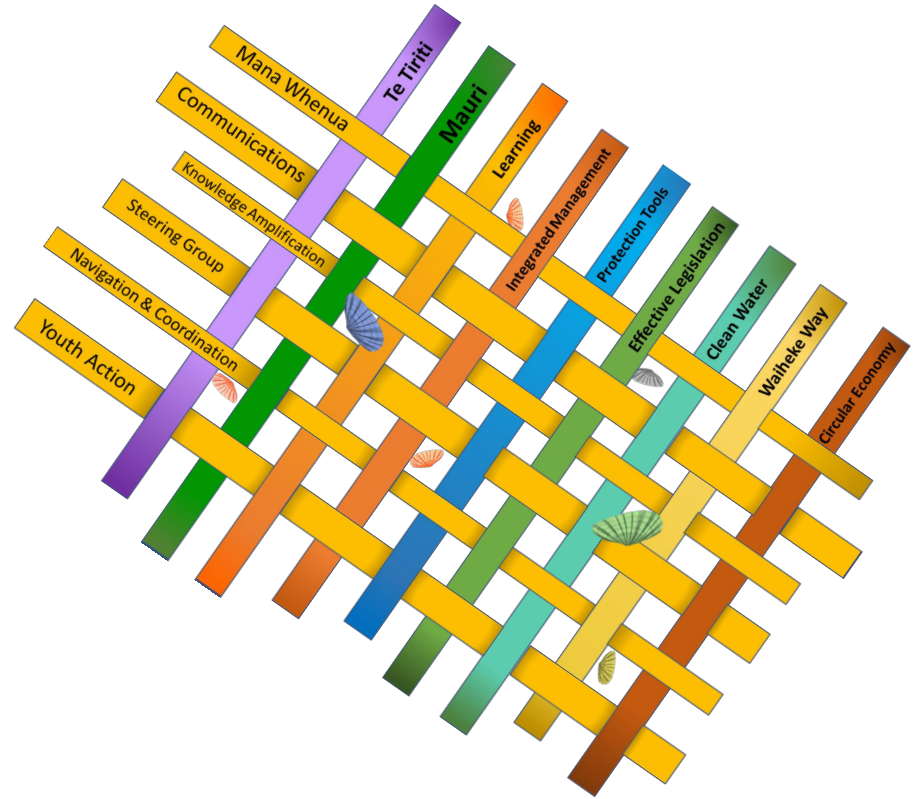
WAIHEKE KI UTA WAIHEKE KI TAI WAIHEKE KI TUA

A collaborative mana whenua and Waiheke Island community partnership movement.

That aims to protect and regenerate Waiheke's marine environment through action-based kaitiakitanga.

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Te Kete

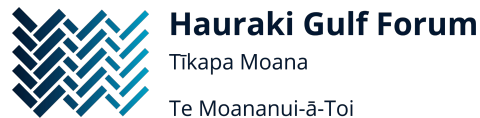


Assessment of Kōura on Waiheke Island May/June 2022

Thanks to our Phase 2 Funders



Endorsed by



Umbrella Entity



WMP Regenerative Dive Programme



Assessment of Kōura on Waiheke Island May/June 2022

Thanks to our community of partners and allies who enabled the 2022 WMP Kōura dive survey

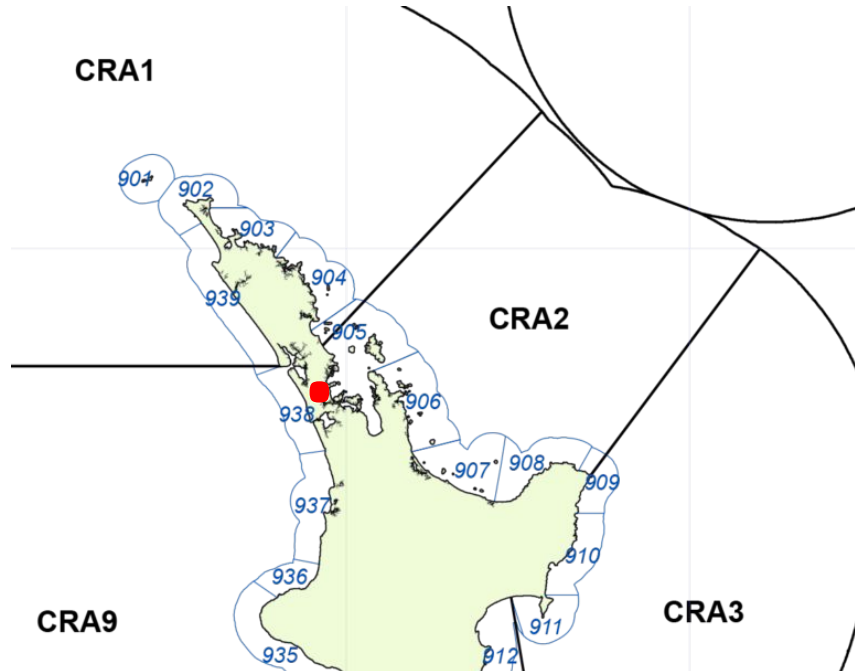
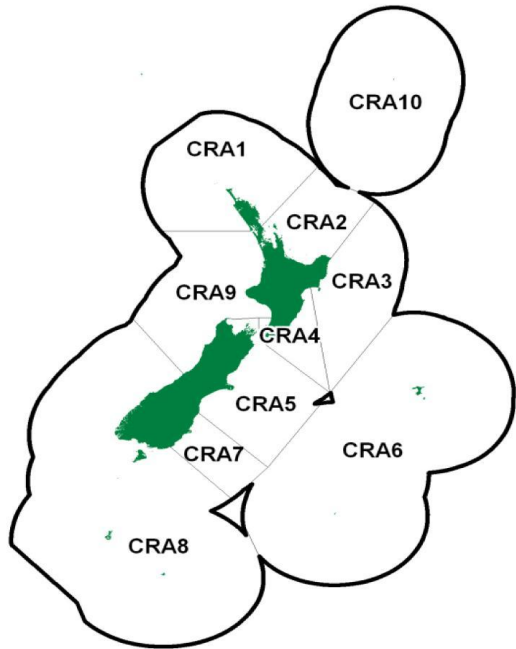


106 volunteers

Assessment of Kōura on Waiheke Island May/June 2022



The issue of Scale when caring for kōura



Panellists

Leigh Takirau

Craig Thorburn

Te Ata Paul-Sumich

Mallory Sea

Lucy Tukua

Mātauranga Māori

Tūhono ki Taiao

Assessment of Kōura on Waiheke Island May/June 2022



Te Orokohanga

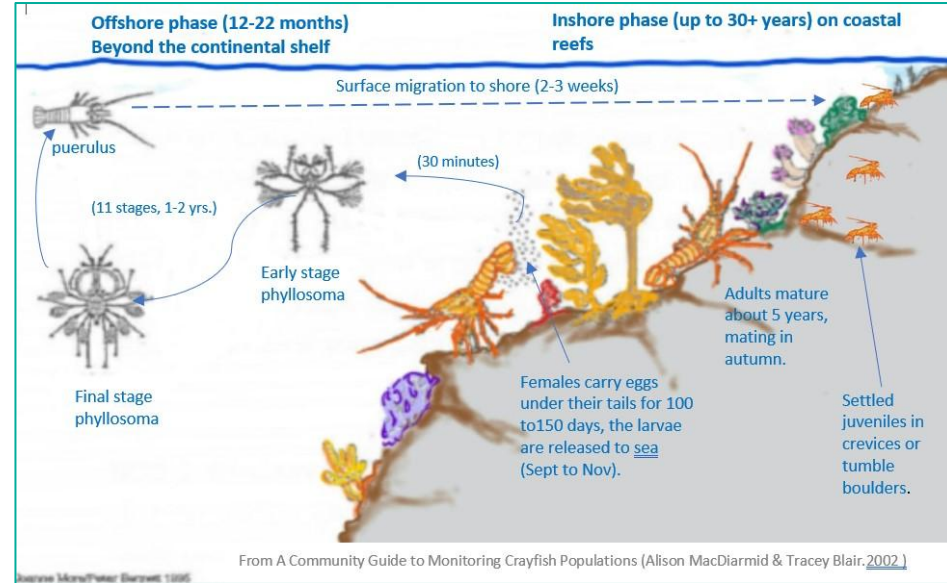
Pūrākau

Assessment of Kōura on Waiheke Island May/June 2022

Life Cycle of kōura

Consider the complexity of the life cycle of kōura.

“7 years to get a legal size koura from the time a female releases her eggs”



The life cycle of kōura on the reefs of Waiheke

The kōura populations of Waiheke and the inner Hauraki Gulf have what is called “pulse settlement of juveniles”. This means that the recruitment of juveniles is infrequent. Natural settlement of juveniles may only occur a few times each decade.

Due to coastal ocean current patterns juvenile kōura do not settle Waiheke and the inner Hauraki Gulf every year.

A lack of juvenile kōura means that there is a lack of smaller kōura growing on the reefs, so that even protecting reefs from further harvest will not increase the overall population.

The offspring from breeding females on Waiheke reefs do not settle back on the same reefs, but are mixed with juveniles from many different regions of the North Island by ocean currents, only a small proportion make it back to the inner islands of the Hauraki Gulf

Kōura populations on Waiheke

- Kōura are now rare on the reefs of Waiheke.
- They are unable to perform their ecological role as a keystone species in a natural healthy reef ecosystem, and now the reef ecosystem is out of balance.
- There are insufficient numbers to meet any harvest needs.

Protection and recovery

Protection & Regeneration:

The current rāhui at Waiheke creates a very special and unique opportunity to explore new ways of helping kōura populations recover.

How many kōura are there now?

Our 2021 survey is the only current data on abundance of kōura on the reefs of Waiheke within the rāhui area.

Continuing this time series is critical to inform future management and rewilding scenarios.

Diver Surveys

Diver surveys have a proven track record of generating valuable estimates of abundance and density

What the survey involved

Volunteer Organisation and Coordination

Our experience with the organisation and coordination of volunteers was challenging yet rewarding.

- The coordination and scheduling of over 100 people.
- Dive roster formation and organisation. We spent many hours forming and organising the dive roster.
- This proved to be our most significant obstacle as we felt it always came down to the wire.
- Organising last minute replacement divers or shifting others around so that we could still complete the transects safely and appropriately.
- Through this shared experience, we learnt many important lessons that will be remembered and passed down to future coordinators.

What the survey involved

Survey Preparation and Execution

We received help with the preparation and execution of the survey from many people, and for that, we are grateful.

- Our amazing Kourā Booklet made through the Waiheke Marine Project.
- E Video with Adam - To help prepare our volunteers for what to expect.
- Also assisting people with gear rental, skippering and valuable experience.
- Te Kaupapa o Ngāti Paoa - We made sure to include and work with Ngāti Paoa in all facets throughout the survey.
- Other WMP volunteers and staff members helping.

Diver Surveys

Counting kōura

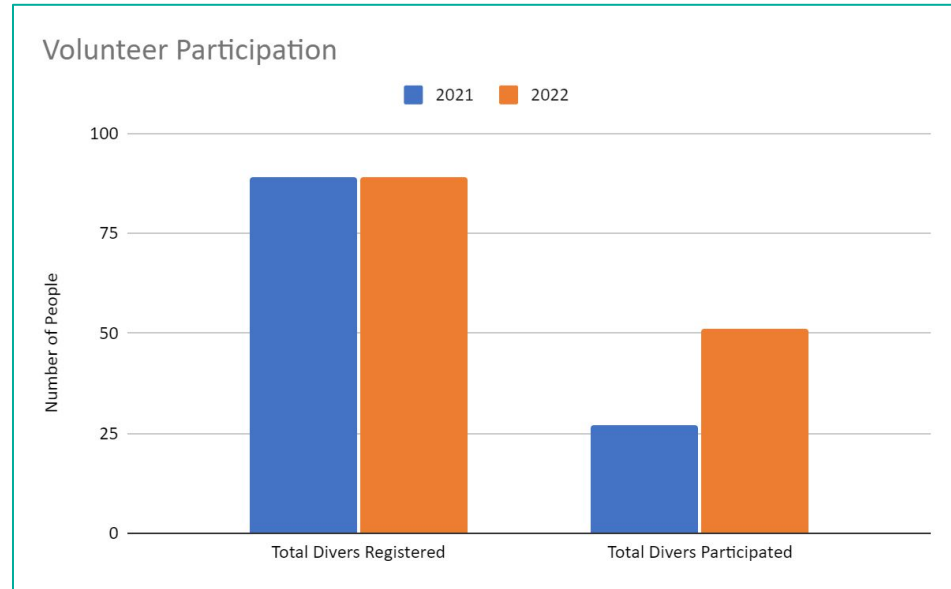
- Surveys were undertaken between the 27th of May and the 19th of June in areas of habitat previously described as Ideal kōura habitat.
- During this years survey we were able to survey the same areas as last year (2021) survey with an additional area; Area 5 .
- Thus allowing us to complete transects and obtain valuable information from along entire northern coastline.



Diver Surveys (2021 vs 2022)

What did the survey involve?

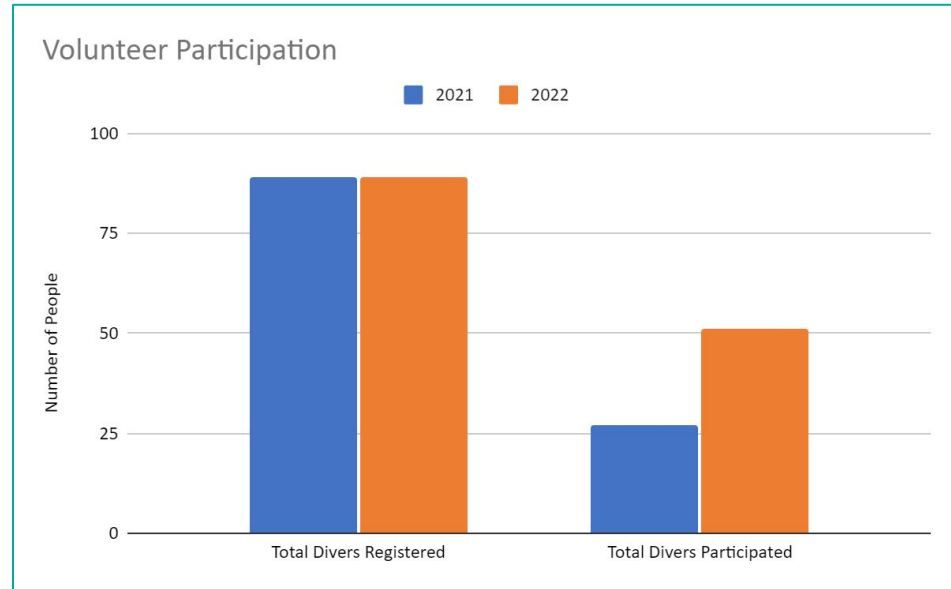
- 89 divers registered to participate in the dive surveys both years.
- However our Diver/volunteer participation increased almost 2-fold this year, despite losing 6 weekend days to poor weather.
- The dive teams were supported by 11 boats/ Skippers from Waiheke and Auckland
- We were able to get 51 divers in the water and together they completed 56 transects covering 28,000m² (2.8 Ha).



Diver Surveys (2021 vs 2022)

What did the survey involve?

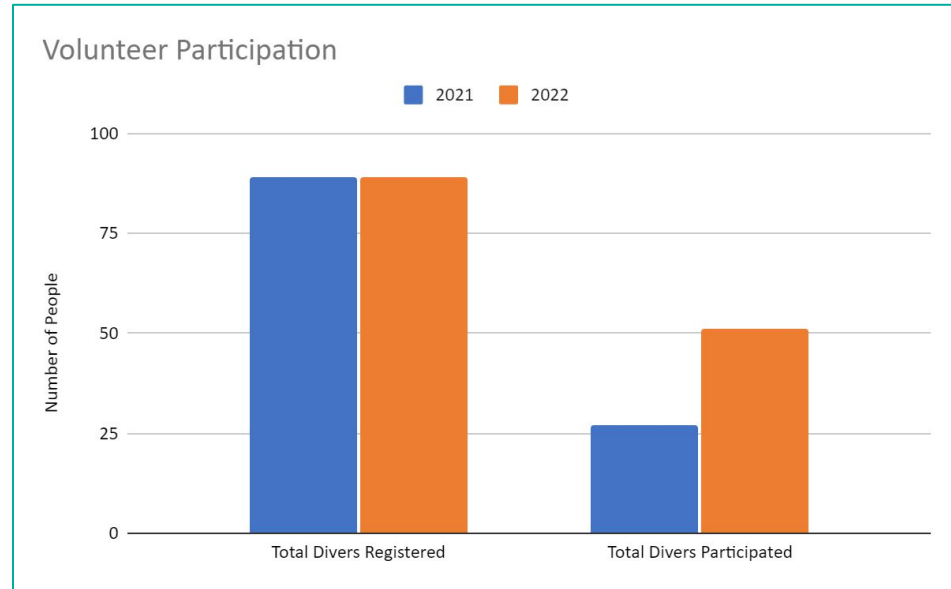
- Logging a total of 118 dives over Waihekes North Coast in 2022.
- Teams of 2 divers swam 50m transects 10m wide recording all kōura encountered.
- Noting general habitat type ranging from Grave/Sand, Cobbles all the way to Platform Reefs and Large Boulder Complexes.
- Also observing Habitat health (kelp and kina densities etc).



Diver Surveys (2021 vs 2022)

What did the survey involve?

- Most teams were able to complete at least 2 dives per day).
- During the Survey animals were not handled or disturbed during the survey.
- As such sex was not able to be determined and measurements in mm or cm were not taken. Kōura were estimated as being only small (sub legal size), or large (legal size)



Locations



Assessment of Kōura on Waiheke Island May/June 2022



Assessment of Kōura on Waiheke Island May/June 2022

Voices of survey volunteers

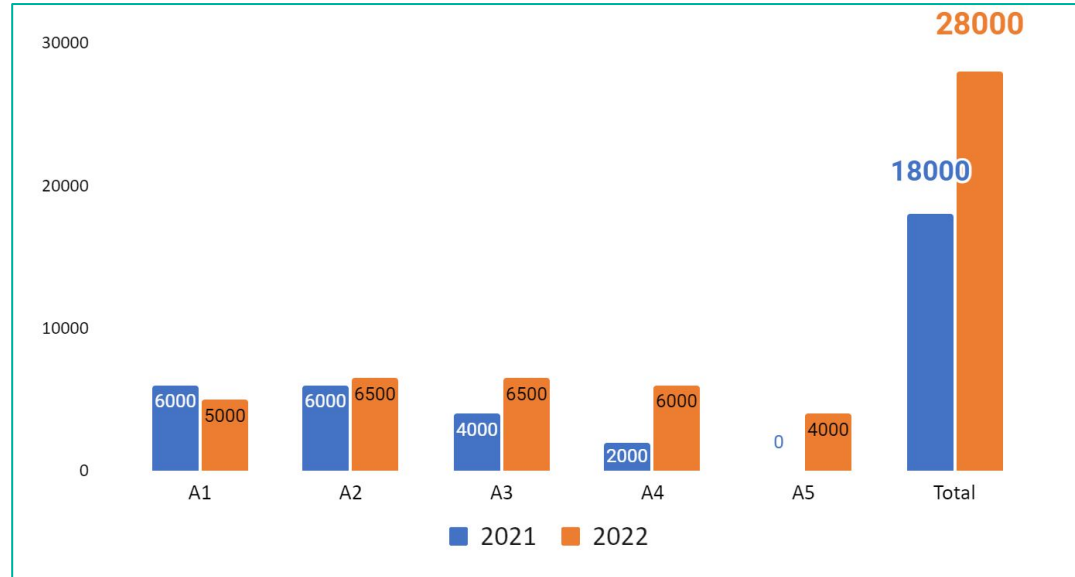


Assessment of Kōura on Waiheke Island May/June 2022

The Results Area

- Diver surveys expanded into a 5th area in 2022
- An additional 10,000m² were surveyed this year

Total Area Surveyed (m²)



The Results

Question 1

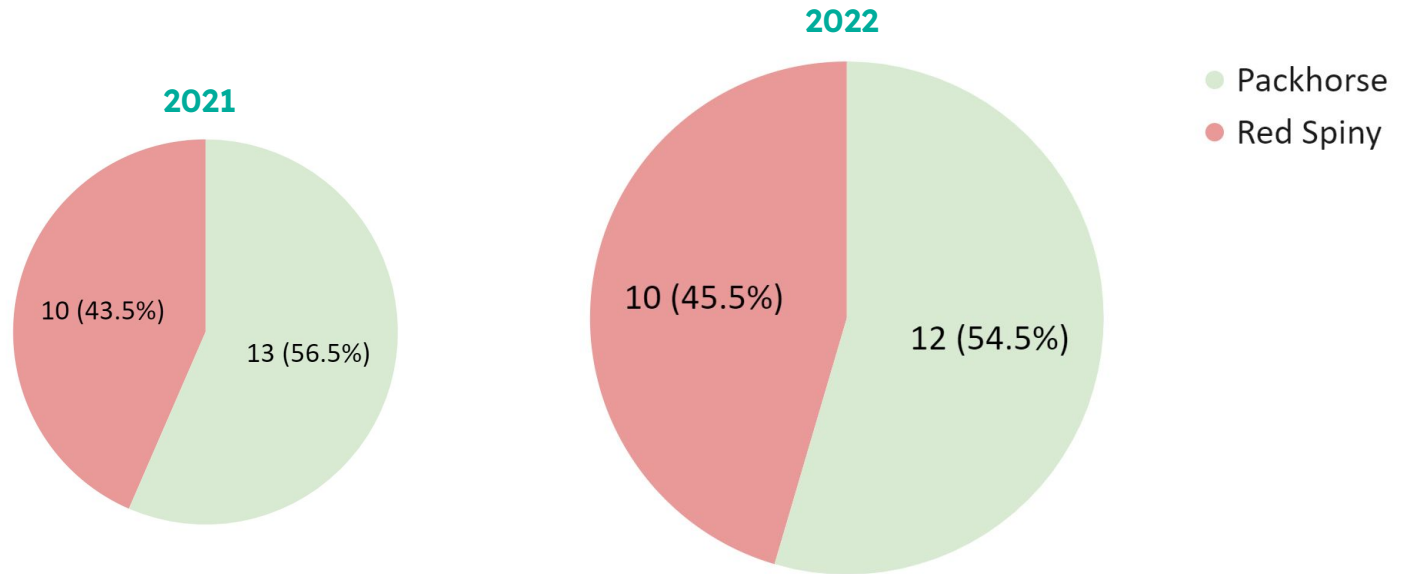
How many kōura were found?

Assessment of Kōura on Waiheke Island May/June 2022

The Results Total Kōura Recorded

- Relatively even split of kōura both years (more red spiny in 2021, more packhorse in 2022)
- Overall, 1 more individual was seen in 2021

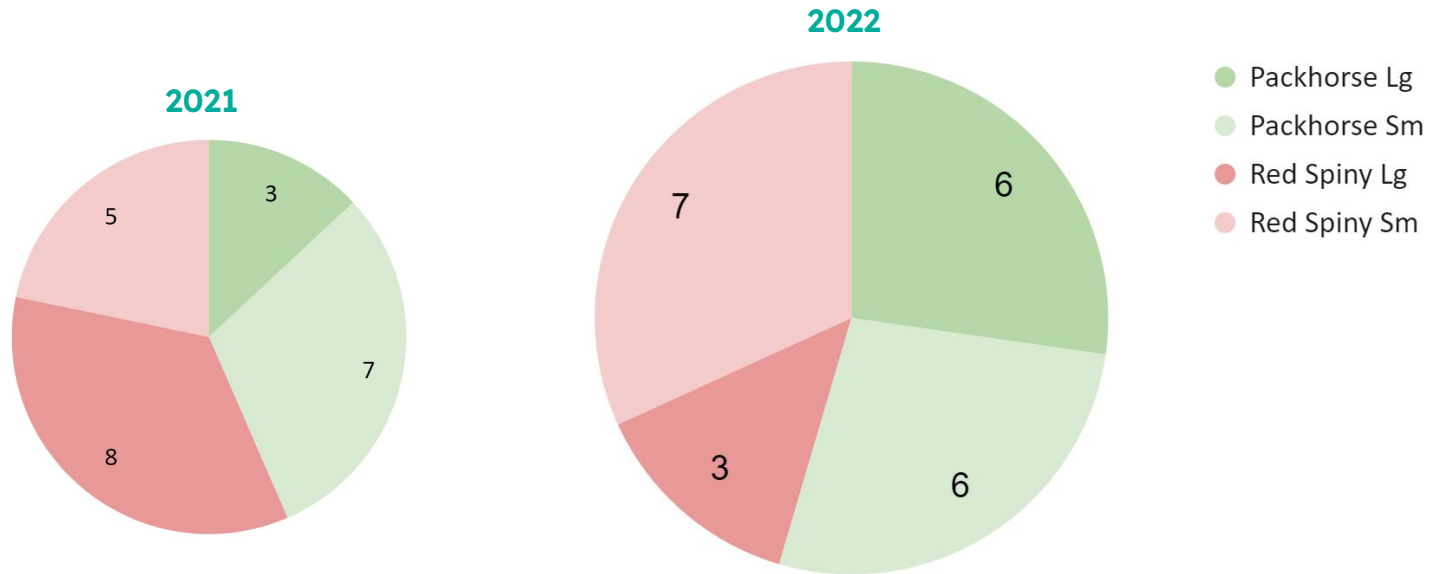
Total Kōura Recorded



The Results Total Kōura Recorded

- Similar between years but less red spiny (large) in 2022 and more packhorse (large) in 2022.

Kōura Size Distribution



The Results

Question 2

Where were kōura found?

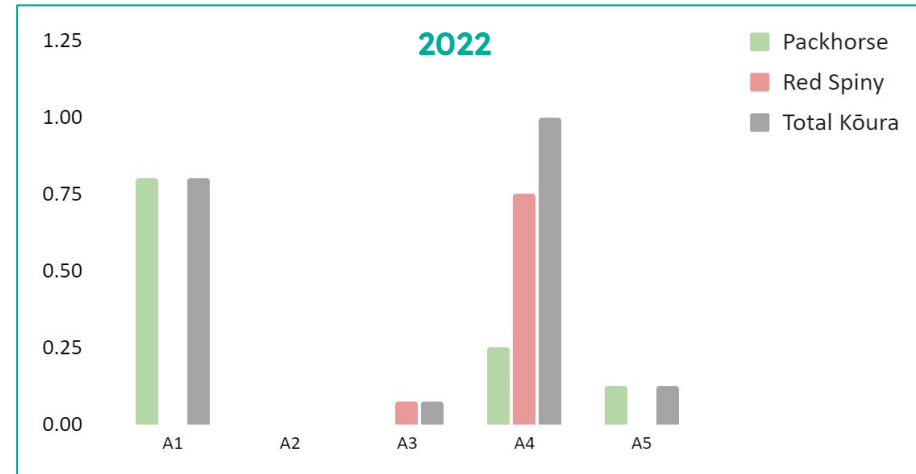
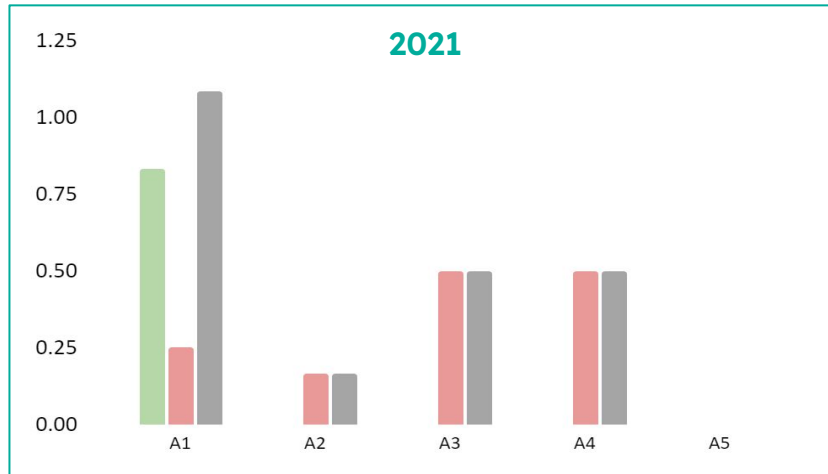


The Results Kōura Abundance

- Packhorse majority in A1. Red Spiny majority in A4.

- Similar packhorse numbers in A1 both years. Red spiny density decreases in A2 and A3 but increases in A4.

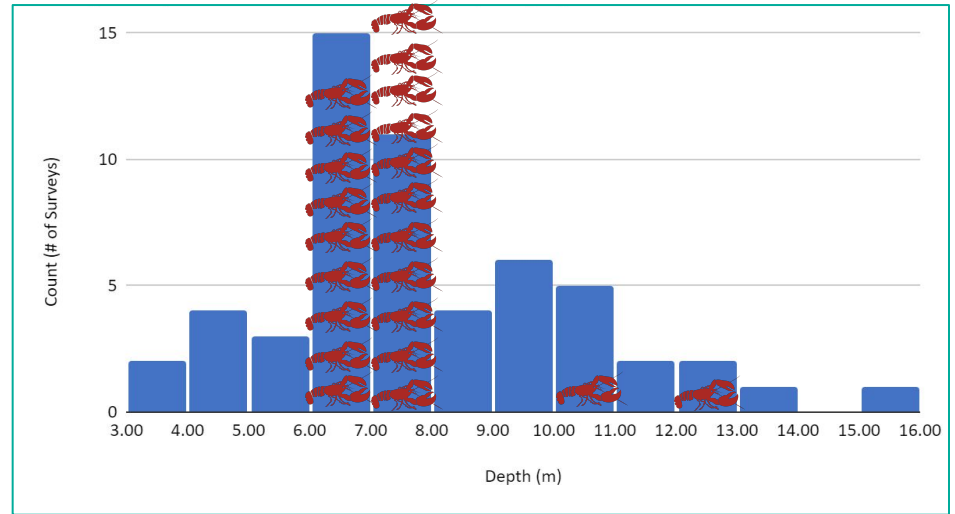
Kōura Abundance (Kōura/500 m²)



The Results Kōura Abundance

- Majority of surveys were undertaken between 6 and 9m depth. All but 2 kōura were found in this depth range.

Frequency distribution: Survey depth (m)



The Results

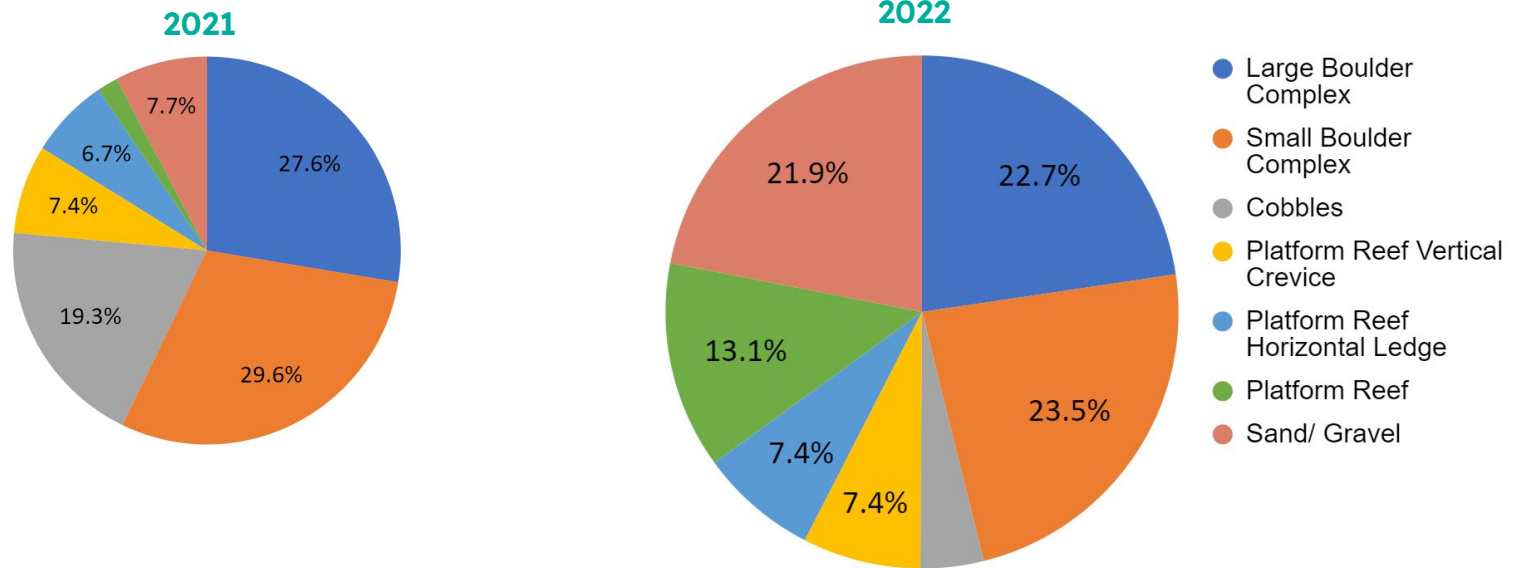
Question 3

What kind of habitat was surveyed?

The Results Habitat Type

- Similar habitat distribution seen between years (more cobbles in 2021, more sand in 2022).
- This suggests that Waiheke habitat hasn't changed drastically and that less experienced citizen scientists from 2022 are capable of quality replication.

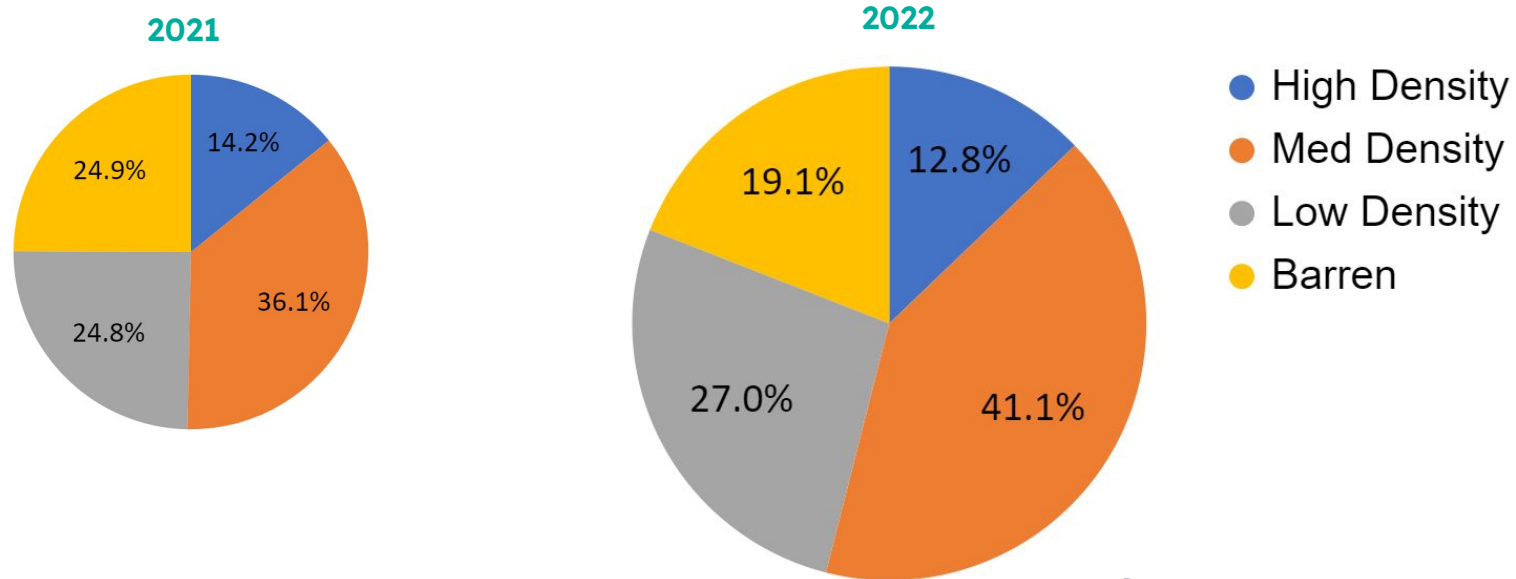
Habitat Type



The Results Habitat Type

- Similar kelp densities between years.
- Larger % medium kelp in 2022 replaces some kelp barrens and high density areas from 2021.

Kelp Density



The Results

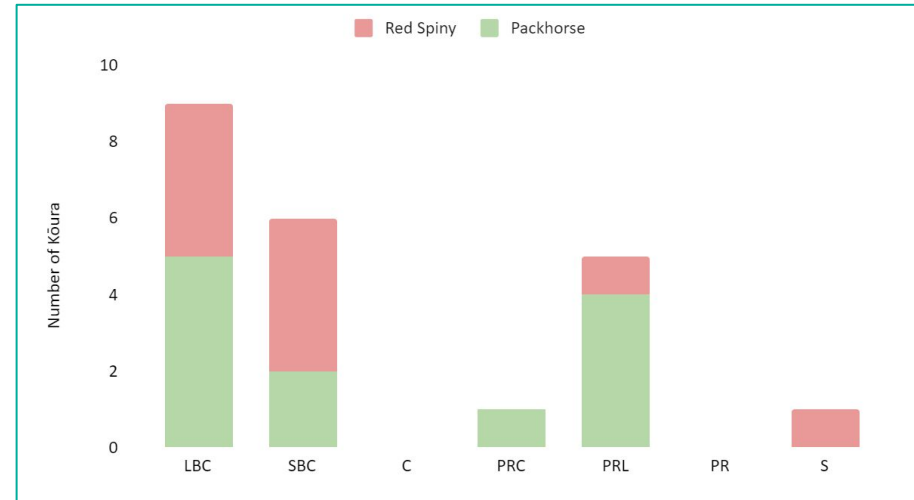
Question 4

Can we connect kōura sightings to their environment?

The Results Connecting Kōura to Habitat

- Majority of kōura found on boulder complexes (small or large).
- All but 1 individual found inhabiting boulders or platform reef, supporting the idea that complex reef habitat is needed for kōura.

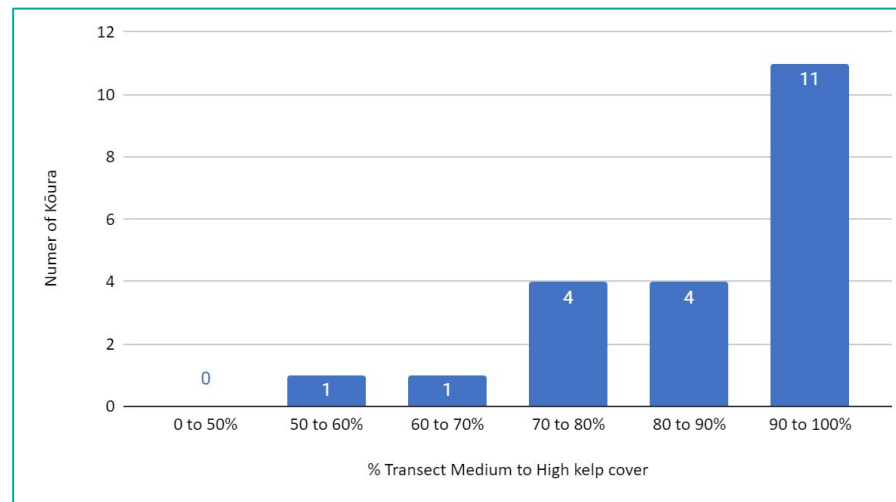
Kōura sightings by habitat type



The Results Connecting Kōura to Kelp

- Clear trend showing preference towards medium and high density kelp habitats.

Relationship between kōura and kelp



Future Possibilities

Benefits of Kōura Re-wilding

INNOVATION

Innovative prototype at scale of rewilding a taonga species

LEADERSHIP

Driven by tangata whenua and deeply supported by the local community

BENEFITS

Regeneration benefits for:

- Kōura and reef ecosystem
- Cultural connection and expertise
- Social capacity and cohesion
- Ocean management innovation
- Knowledge amplification for marine species care

GROWTH

Growth of inter generational expertise in marine species care

- Tangata whenua and community will have access to training and support to enable local marine monitoring and care of the rewilded kōura

Needs



Source population of adult kōura



Management of Protected Areas



Agency support for any regulatory permissions

Project phases

PHASE 1

Locate source kōura

PHASE 2

Readiness preparation

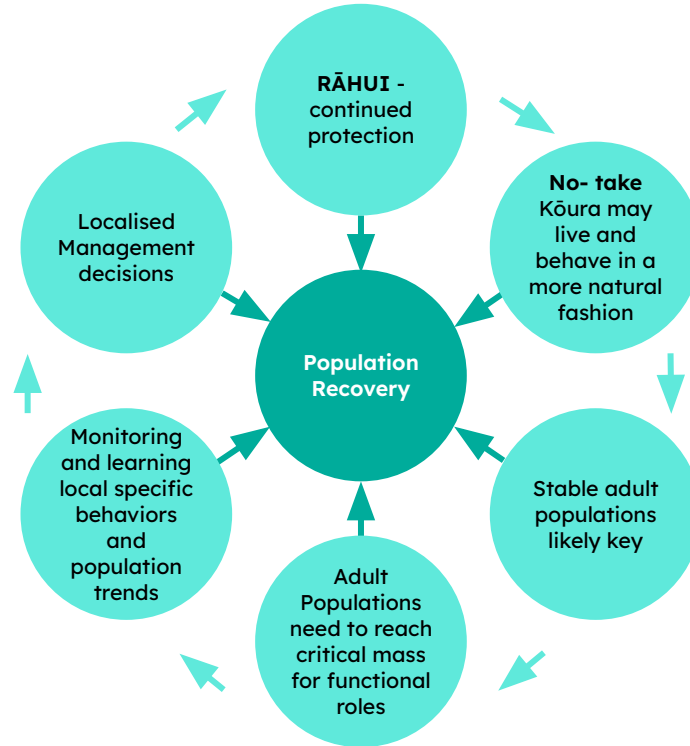
PHASE 3

Re-locate kōura to Waiheke

PHASE 4

Track and monitor kōura

The Results Re-wilding Kōura to the reefs.



Waiheke Marine Project Regenerative dive possibilities

- Transect dives
- Spot X dives
- Habitat dives
- Ongoing monitoring

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An underwater photograph of a kōura (rock lobster) resting on a rocky seabed. The lobster is the central focus, with its long antennae and legs visible. The background shows a rocky reef structure with some yellowish-orange growth. The lighting is somewhat dim, typical of an underwater environment.

He manako te kōura i kore ai

Wishing for the kōura doesn't
mean you are going to get it.
We have to do the work.