MAURI COMPASS · ROCKY SHORE SURVEY

KĀWAROA REEF EDITION

Rocky Shore Survey

A5 Field Booklet · NZ Standard Intertidal Method
50m Transect · 25 Quadrats · Kāwaroa Species List

SITE

Kāwaroa Reef

New Plymouth, Taranaki · −39.0508°S, 174.0618°E

DATE _____ TIME _____

ASSESSOR _____ FORM ID _____

Mauri Compass · mauricompass.biz · Intertidal Monitoring
v2.0 — Kāwaroa Reef Edition · May 2026
Mana Whenua: Ngāti Te Whiti · Taranaki Region · Aotearoa New Zealand

SURVEY INFORMATION

Site Name: Kāwaroa Reef	Date:
Time:	Assessor:
Latitude: −39.0508°S	Longitude: 174.0618°E
Region: Taranaki	Species List: Kāwaroa Reef
Tide Time:	Tide Height (m):
Moon Phase:	Hemisphere: Southern

SAFETY CHECKLIST

- ☐ PPE Worn
- ☐ Weather Checked
- ☐ First Aid Kit
- ☐ Emergency Plan Briefed
- ☐ Tide Checked (NP Gauge)
- ☐ Buddy System
- ☐ Communication Device
- ☐ Check Clean Dry

Kāwaroa Safety Note: Exposed Tasman Sea swells can arrive rapidly. Survey only within 2 hours of low tide. Monitor swell height — abort if >0.8m. No swimming or snorkelling. Wet rocks are extremely slippery.

WEATHER & MARINE CONDITIONS

ATMOSPHERIC

Temperature (°C)	
Apparent Temp (°C)	
Wind Speed (km/h)	
Wind Direction	
Wind Gusts (km/h)	
Cloud Cover	
Humidity (%)	
Visibility	
Precipitation	
Pressure (hPa)	
Rainfall 24h (mm)	
Rainfall 7d (mm)	

MARINE (TASMAN SEA)

Swell Height (m)	
Swell Direction	
Wave Height (m)	
Wave Direction	
Wave Period (s)	
Sea Surface Temp (°C)	
Tidal Stage	
Water Clarity	

TRANSECT INFORMATION

Start Label	Bearing

KR-T1-HI (High Shore)	**~270° (W — seaward)**
Start Lat	Start Lng
End Label **KR-T1-LO (Low Shore)**	Length (m) **50**
End Lat	End Lng

Quadrats 1–10

Kāwaroa Reef · High Shore Zone

Species name | Type: C=count, %=percent cover | Zone: H=High, M=Mid, L=Low, S=Sub | Sand cover as % of quadrat

Q1
Z:___ S:___%
Notes:

Q2
Z:___ S:___%
Notes:

Q3
Z:___ S:___%
Notes:

Q4
Z:___ S:___%
Notes:

Q5
Z:___ S:___%
Notes:

Q6
Z:___ S:___%
Notes:

Q7
Z:___ S:___%
Notes:

Q8
Z:___ S:___%
Notes:

Q9
Z:___ S:___%
Notes:

Q10
Z:___ S:___%
Notes:

Quadrats 11–20

Kāwaroa Reef · Mid Shore Zone

Species name | Type: C=count, %=percent cover | Zone: H=High, M=Mid, L=Low, S=Sub | Sand cover as % of quadrat

Q11
Z:___ S:___%

Notes:

Q12
Z:___ S:___%

Notes:

Q13
Z:___ S:___%

Notes:

Q14
Z:___ S:___%

Notes:

Q15
Z:___ S:___%

Notes:

Q16
Z:___ S:___%

Notes:

Q17
Z:___ S:___%

Notes:

Q18
Z:___ S:___%

Notes:

Q19
Z:___ S:___%

Notes:

Q20
Z:___ S:___%

Notes:

Species name | Type: C=count, %=percent cover | Zone: H=High, M=Mid, L=Low, S=Sub | Sand cover as % of quadrat

Q21	Q22	Q23	Q24	Q25
Z:___ S:___%	Z:___ S:___%	Z:___ S:___%	Z:___ S:___%	Z:___ S:___%
Notes:	Notes:	Notes:	Notes:	Notes:

OVERFLOW — ADDITIONAL SPECIES (IF QUADRAT BOXES TOO SMALL)

Q#	Species Name (Common / Te Reo / Scientific)	Type	Value	Notes

Kāwaroa Reef Species — Quick Reference

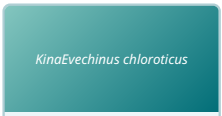
Top species recorded at this site · iNaturalist + TRC data

ZONE DIAGRAM — KĀWAROA REEF PROFILE

Splash	High	Mid	Low	Sub
Periwinkle	Limpet	Mussel	Kina · Pāua	Kelp
Barnacle	Chiton	Neptune's Necklace	Triplefin	Conger

KĀWAROA SPECIES — COUNT (C) & PERCENT COVER (%)

Pāua
Pāua
Haliotis iris
L/S · C



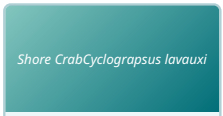
Sea Urchin
Kina
Evechinus chloroticus
L/S · C

Green-lipped Mussel
Kūtai / Kuku
Perna canaliculus
M/L · %

Limpet
Ngākihi
Cellana spp.
H/M · C

Columnar Barnacle
—
Chamaesipho columna
H/M · %

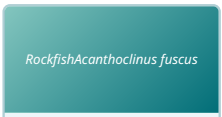
Snakeskin Chiton
Kāeo
Sypharochiton pelliserpentis
H/M · C



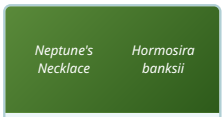
Shore Crab
Pāpaka
Cyclograpsus lavauxi
H/M · C

Orange-tipped Sea Squirt
—
Corella eumyota
L/S · %

Common Triplefin
Tātarakihi
Forsterygion lapillum
L/S · C

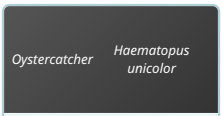


Olive Rockfish
—
Acanthoclinus fuscus
L/S · C



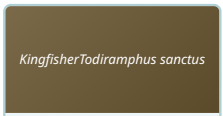
Neptune's Necklace
—
Hormosira banksii
M/L · %

Sea Lettuce
Karengo (similar)
Ulva lactuca
H/M · %



Variable Oystercatcher
Tōrea
Haematopus unicolor
All · C

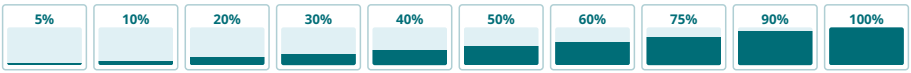
Pacific Reef Heron
Matuku Moana
Egretta sacra
All · C



Sacred Kingfisher
Kōtare
Todiramphus sanctus
All · C

Kelp Gull
Karoro
Larus dominicanus
All · C

PERCENT COVER VISUAL ESTIMATOR



SURVEY PROTOCOL — KĀWAROA REEF SPECIFIC

1. **Tidal Window:** Check New Plymouth tidal gauge (LINZ). Plan to arrive 1–2 hours before low tide. Optimal survey window: ±2 hours of low tide. Abort if swell >0.8m or wind >40 km/h.
2. **Safety:** Complete all 8 safety checklist items. Brief team on emergency plan. Wear boots with grip soles — Kāwaroa Reef platform is extremely slippery when wet. Buddy system mandatory.
3. **Check Clean Dry:** Inspect, clean, and dry all equipment before and after survey to prevent biosecurity risks. Kāwaroa Reef is adjacent to the Tapuae Marine Reserve — biosecurity is critical.
4. **Site Setup:** Record GPS coordinates at transect start (high shore, near playground access path). Pre-filled site name, region, and coordinates are confirmed on page 2.
5. **Transect:** Lay 50m transect tape perpendicular to shore (bearing ~270° W) from high to low tide mark. Record actual start/end GPS. Transect label: KR-T1.
6. **Quadrats:** Place 25 quadrats (0.25m^2) at 2m intervals. Number sequentially from high shore. Note zone (H/M/L/S), sand cover %, and photograph each quadrat.
7. **Recording:** Use the Kāwaroa species list on page 6 as your primary reference. Count mobile animals (C); estimate percent cover (%) for sessile organisms and algae. Record te reo Māori names where known.
8. **Kaimoana Note:** Record pāua, kina, and crayfish counts carefully — these are compared against the TRC biannual kaimoana baseline for Kāwaroa Reef (monitored since 2009).
9. **Completion:** Retrieve transect tape. Confirm all 25 quadrats recorded. Note end time. Complete Check Clean Dry on departure.

DATA ENTRY — TRANSCRIPTION TO MAURI COMPASS APP

1. Open mauricompass.biz → Rocky Shore Survey → **Kāwaroa Reef** module on any device.
2. **Survey Info:** Site name, date, time, assessor, GPS, region, tide time/height, moon phase, and species list are pre-populated for Kāwaroa Reef — verify against paper readings.
3. **Safety:** Tick all 8 safety checklist items. Complete Check Clean Dry declaration.
4. **Weather:** Enter all atmospheric and marine conditions. The app auto-scans MetService and LINZ data when GPS is captured — verify against paper readings.
5. **Transect:** Confirm start/end GPS coordinates, bearing (270°), and transect length (50m).
6. **Quadrats:** For each of the 25 quadrats: set sand cover %, then add each species with count or % cover. Upload quadrat photo. Add notes.
7. **Results:** The app auto-calculates Shannon-Wiener diversity index (H'), species richness (S), and ecological indices. Compare against the Kāwaroa Reef TRC baseline.
8. **Export:** Generate PDF report (includes GPS QR code), email to team, or download for offline backup. Use bulk ZIP export for all modules.

> **Kāwaroa Tips:** Neptune's necklace (*Hormosira banksii*) is the dominant mid-shore alga — estimate cover carefully as it can exceed 80% in the mid zone. Pāua are typically found under rock overhangs in the low zone. Triplefin fish are cryptic — look in rock pools. The Orange-tipped Sea Squirt (*Corella eumyota*) is an introduced species — record location precisely.

RECORDING CODES

Code	Meaning	Parameter	Options
C	Count — tally individual mobile animals	Wind Dir	N NE E SE S SW W NW Calm
%	Percent cover — algae, encrusting organisms	Cloud	Clear, Few, Scattered, Broken, Overcast
H	High intertidal zone	Visibility	Excellent, Good, Moderate, Poor
M	Mid intertidal zone	Precip	None, Drizzle, Rain, Heavy, Fog

Code	Meaning	Parameter	Options
L	Low intertidal zone	Swell Dir	NW W SW (dominant at Kāwaroa)
S	Sub-tidal / splash zone	Temp	°C — actual value

FIELD NOTES & ADDITIONAL OBSERVATIONS

Record unusual species, environmental observations, disturbance, human impacts, kaimoana observations, or other notes here.

SKETCH / TRANSECT MAP — KĀWAROA REEF

Draw transect layout, rock pool locations, notable features, or site map. Mark Paritutu Rock (NE) and Ngā Motu / Sugar Loaf Islands (NW) as orientation landmarks.

Sketch area — transect map, rock pool locations, notable features

Mauri Compass · Rocky Shore Survey
NZ Standard Intertidal Method · 50m Transect · 25 Quadrats · Kāwaroa Reef Edition
mauricompass.biz · Transcribe data at mauricompass.biz → Rocky Shore Survey → Kāwaroa Reef
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