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Translocation of black foot pāua (*Haliotis iris*) in a customary fishery management area: transformation from top-down management to kaitiakitanga (local guardianship) of a cultural keystone

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SUPPLEMENTARY MATERIAL

Supplementary Material 1. Table 1 references

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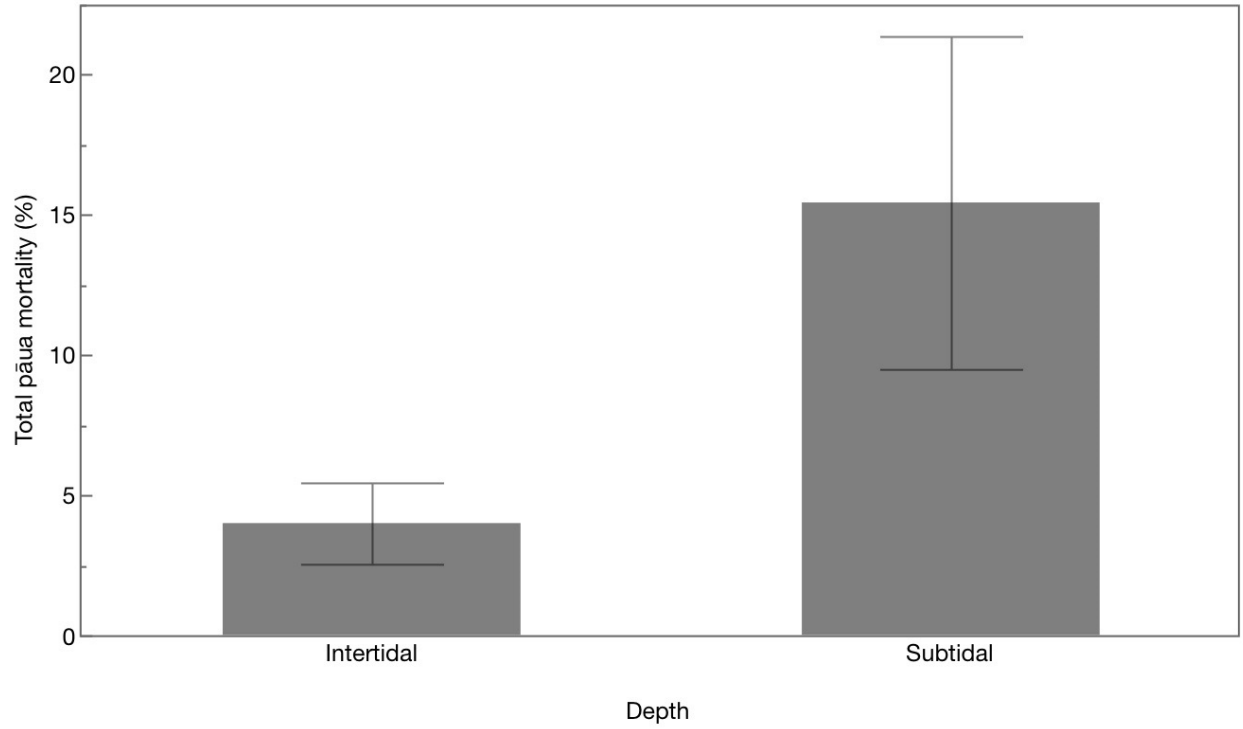
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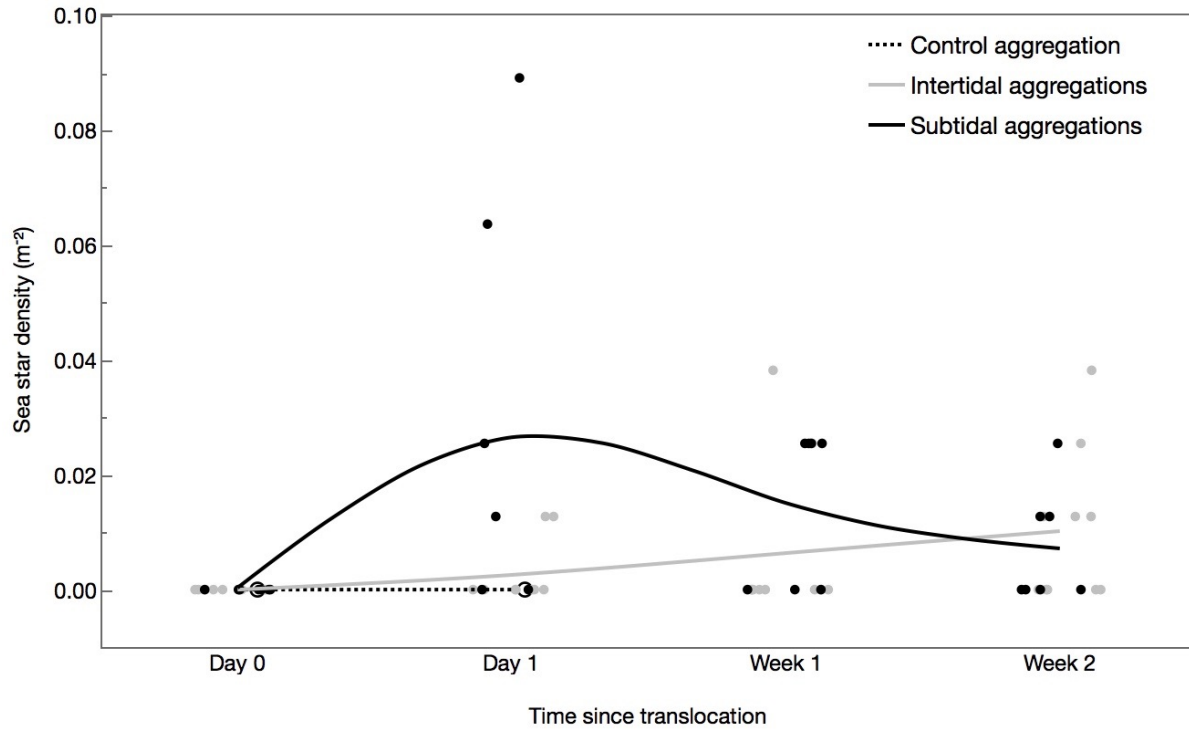
Supplementary Material 2. Recovery of translocated pāua (*Haliotis iris*) (percentage [%], count [#], and density [m^{-2}]). Figures are provided for individual sites. Depth is indicated by 'I' for intertidal sites, 'S' for subtidal sites, and 'C' for control site.

| Site | Translocation | | | Day 1 | | | Week 1 | | | Week 2 | | |
|------|---------------|---|----------|-------|----|----------|--------|----|----------|--------|---|----------|
| | % | # | m^{-2} | % | # | m^{-2} | % | # | m^{-2} | % | # | m^{-2} |
| I1 | 20 | - | 0.25 | 13 | 65 | 0.17 | 0 | 0 | 0.00 | 0 | 0 | 0.00 |
| I2 | 20 | - | 0.25 | 16 | 80 | 0.20 | 3 | 15 | 0.04 | 0 | 0 | 0.00 |
| I3 | 20 | - | 0.25 | 15 | 75 | 0.19 | 5 | 25 | 0.06 | 1 | 5 | 0.01 |
| I4 | 20 | - | 0.25 | 14 | 70 | 0.18 | 0 | 0 | 0.00 | 0 | 0 | 0.00 |
| I5 | 20 | - | 0.25 | 12 | 60 | 0.15 | 0 | 0 | 0.00 | 0 | 0 | 0.00 |
| I6 | 20 | - | 0.25 | 8 | 40 | 0.10 | 0 | 0 | 0.00 | 0 | 0 | 0.00 |
| I7 | 20 | - | 0.25 | 9 | 45 | 0.11 | 1 | 5 | 0.01 | 0 | 0 | 0.00 |
| I8 | 20 | - | 0.25 | 14 | 70 | 0.18 | 0 | 0 | 0.00 | 0 | 0 | 0.00 |
| I9 | 20 | - | 0.25 | 12 | 60 | 0.15 | 1 | 5 | 0.01 | 0 | 0 | 0.00 |
| I10 | 20 | - | 0.25 | 11 | 55 | 0.14 | 0 | 0 | 0.00 | 0 | 0 | 0.00 |
| S1 | 20 | - | 0.25 | 12 | 60 | 0.15 | 1 | 5 | 0.01 | 0 | 0 | 0.00 |
| S2 | 20 | - | 0.25 | 6 | 30 | 0.08 | 0 | 0 | 0.00 | 0 | 0 | 0.00 |
| S3 | 20 | - | 0.25 | 14 | 70 | 0.18 | 2 | 10 | 0.03 | 0 | 0 | 0.00 |
| S4 | 19 | - | 0.24 | 16 | 84 | 0.20 | 6 | 32 | 0.08 | 1 | 5 | 0.01 |
| S5 | 20 | - | 0.25 | 12 | 60 | 0.15 | 4 | 20 | 0.05 | 0 | 0 | 0.00 |
| S9 | 21 | - | 0.26 | 15 | 71 | 0.19 | 4 | 19 | 0.05 | 1 | 5 | 0.01 |
| S10 | 21 | - | 0.26 | 14 | 67 | 0.18 | 0 | 0 | 0.00 | 0 | 0 | 0.00 |
| C | 20 | - | 0.25 | 17 | 85 | 0.22 | - | - | - | - | - | - |

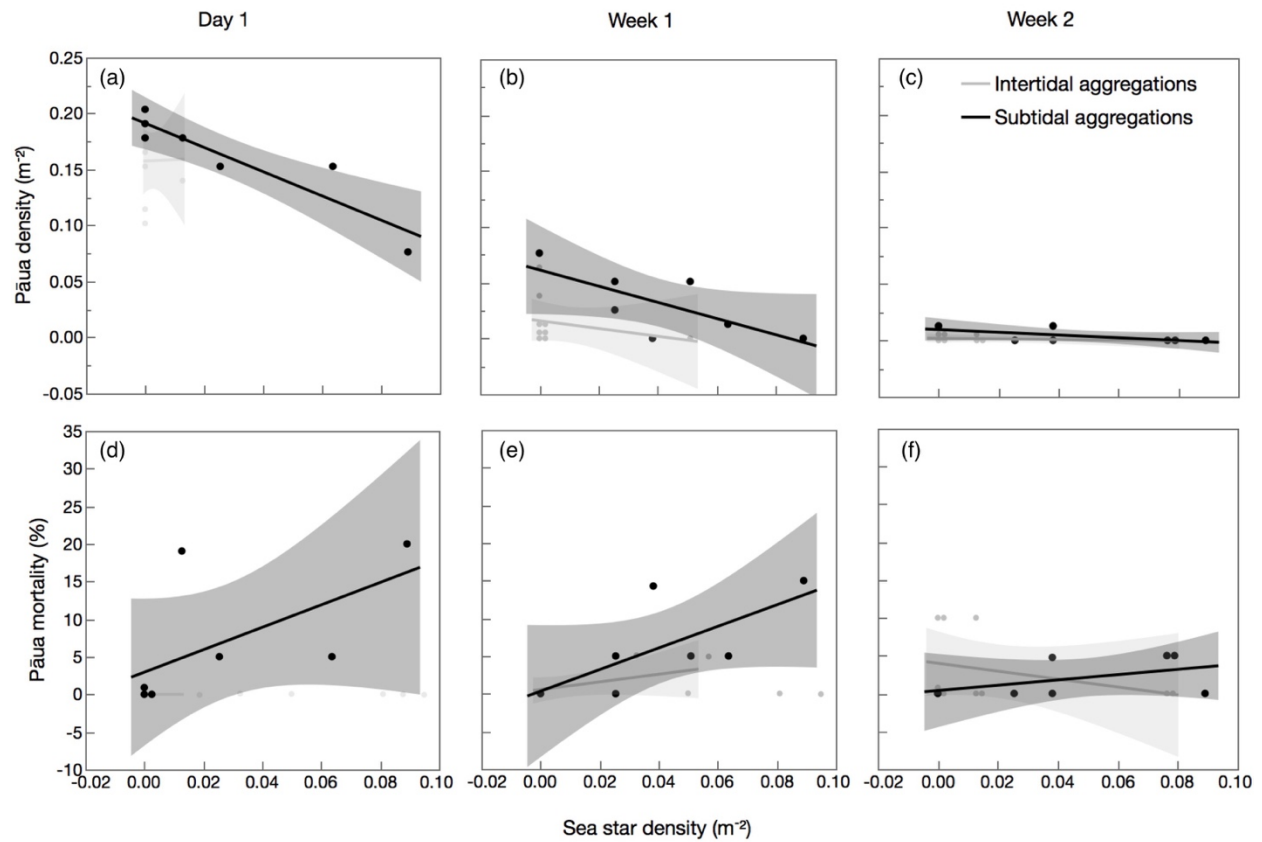
Supplementary Material 3. Average mortality (%) of translocated pāua (*Haliotis iris*) as measured on the Week 2 survey. Shown for 10 intertidal and 7 subtidal aggregations. Bars represent standard error.



Supplementary Material 4. Density (m^{-2}) of sea stars (*A. scabra*) over the 2-week survey period within 10 intertidal (grey) and 7 subtidal (black) aggregations, and 1 control site (dotted line).



Supplementary Material 5. Correlation between density (m^{-2} , A – C) and mortality (% D – F) of pāua (*Haliotis iris*) with sea star (*A. scabra*) density (m^{-2}), as measured on Day 1 (A, D), Week 1 (B, E), and Week 2 (C, F). Displayed for 10 intertidal (grey) and 7 subtidal (black) aggregations.



Supplementary Material 6. Glossary of Māori terms

| Māori term | Definition |
|--------------------------|---|
| Aotearoa | New Zealand |
| Hapū | Sub-tribe |
| Iwi | Tribe |
| Kaimoana | Seafood |
| Kaitiaki | Guardian |
| Kaitiakitanga | Guardianship |
| Kaumātua | Respected elder |
| Ki uta, ki tai | Indigenous, holistic management from the mountains to the sea |
| Kina | Sea urchin, <i>Evechinus chloroticus</i> |
| Kōhanga | Nursery areas |
| Kōura | Crayfish, <i>Jasus edwardsii</i> |
| Māori | Indigenous peoples of Aotearoa |
| Mahinga kai | The Indigenous use and management of natural resources, the places where those resources are gathered and the resources themselves |
| Mataitai Reserves | A management tool within the customary fishing regulations to recognise and provide for the Indigenous use and management practices of hapū and iwi. |
| Mātauranga | Māori knowledge |
| Mauri | Life force |
| Pāua | Abalone, <i>Haliotis iris</i> |
| Pōhā | Bags for storing and transporting food made from bull kelp (<i>Durvillaea antarctica</i>) |
| Rāhui | Temporary closure |
| Rāwaru | Blue cod, <i>Parapercis colias</i> |
| Taiāpure Local Fisheries | A management tool within Part 9 of the Fisheries Act to make better provision for Indigenous fishing rights under Article II of the Treaty of Waitangi. |
| Taonga | Treasure |
| Tangata Tiaki | Indigenous fisheries managers appointed under the customary fishing regulations |
| Te Waipouamu | The South Island of Aotearoa |
| Tikanga | Indigenous values and practices |
| Toheroa | Surf clam, <i>Paphies ventricosa</i> |
| Whānau | Family, or community of extended families |