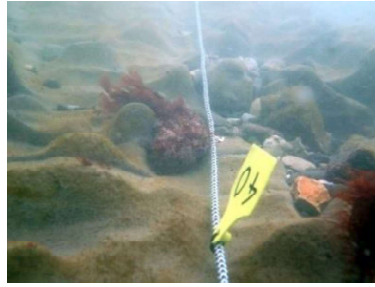


TEMPORAL CHANGES IN SUBTIDAL HABITATS ALONG THE
KAIKŌURA COASTLINE POST-EARTHQUAKE

Coastal and fisheries recovery, Kaikōura, December 2019

Robyn Dunmore
Dan Crossett
David Schiel



SITES: ACROSS A DEGREE
OF UPLIFT, FROM CAPE
CAMPBELL TO OARO.

Sites allocated Uplift levels
according to values determined
by GNS Science
C = control L = low
M = medium H = high

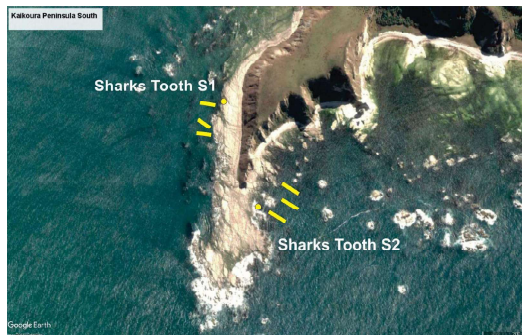
- 5 locations (surveyed 9-12 months post-EQ)
- 5 locations (surveyed 9-12 and 17-20 months post-EQ)
- 4 locations, six sites (29-30 months post-EQ)



SURVEY DESIGN

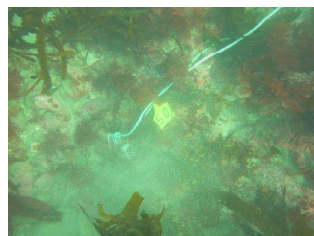
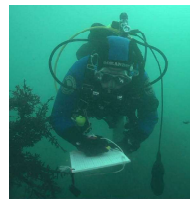
Within each location:
2 sites
At each site, 3 transects

50 m transects perpendicular to the shore,
from the low tidal zone to depths of <10 m



SURVEY DESIGN

- Substrate type, seaweed and sessile invertebrate percentage covers, and numbers of mobile invertebrates;
- Video;
- Fish counts;
- Pāua measurements using underwater calipers.

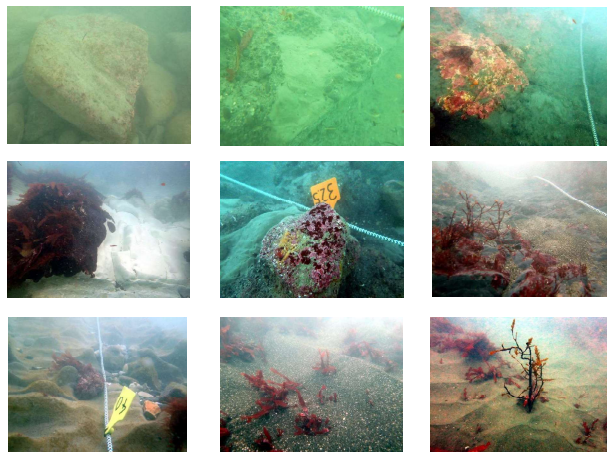


GENERAL OBSERVATIONS

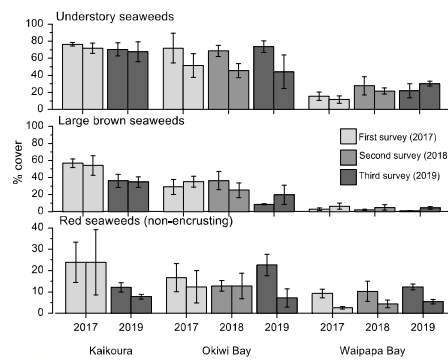
- The degree of uplift was reflected in the amount of habitat disturbance
 - Most disturbance at Waipapa (high uplift)
 - Minor-medium disturbance at medium levels of uplift (Ward, Wharanui, Okiwi, Rakautara and Omihi)
 - No obvious effects at no-low uplift sites (Oaro, Kaikoura Peninsula, Cape Campbell)

- Bare rock
- Sand/gravel areas

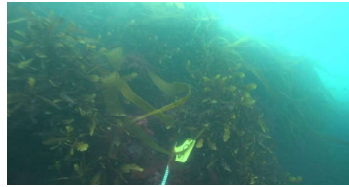
Location	Uplift	Effects
Oaro	C	No obvious
Cape Campbell	L	No obvious
Kaikoura North	L	No obvious
Kaikoura South	L	No obvious
Omihi	M	Minor
Rakautara	M	Minor
Ward	M	Minor-medium
Wharanui	M	Minor-medium
Okiwi Bay	M	Minor-medium
Waipapa Bay	H	Mejor



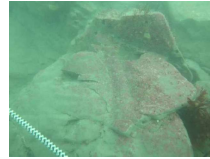
ALGAE



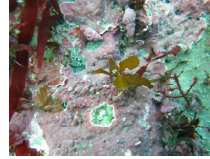
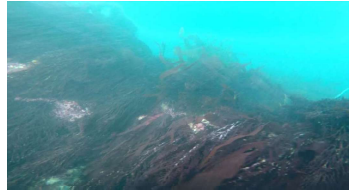
Okiwi 2017



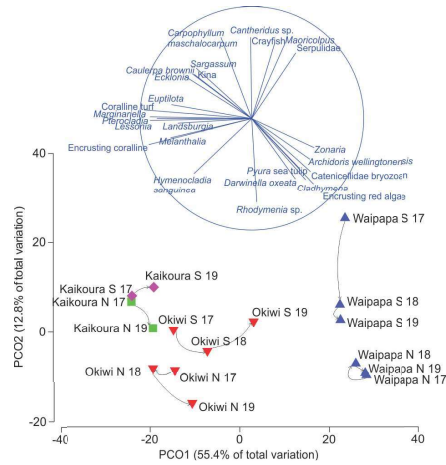
Waipapa 2019



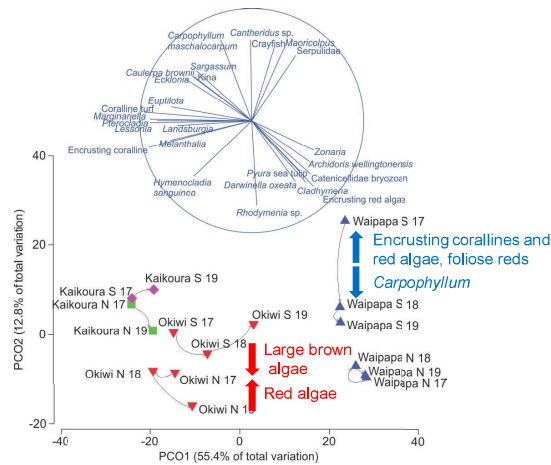
Okiwi 2019



PCO



PCO



Okiwi North T3

2017



2019

