



Small-scale, short-term growth of an invasive bryozoan in Monterey Harbor



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Watersipora subtorquata

Distribution: global in warm/cold temperate seas (9-18° C)

West Coast: Bremerton, WA to Baja California

Status: invasive and spreading; confused with congeners

Habitat: dock pilings, shells and rocky reef

Depth: to at least 10 m

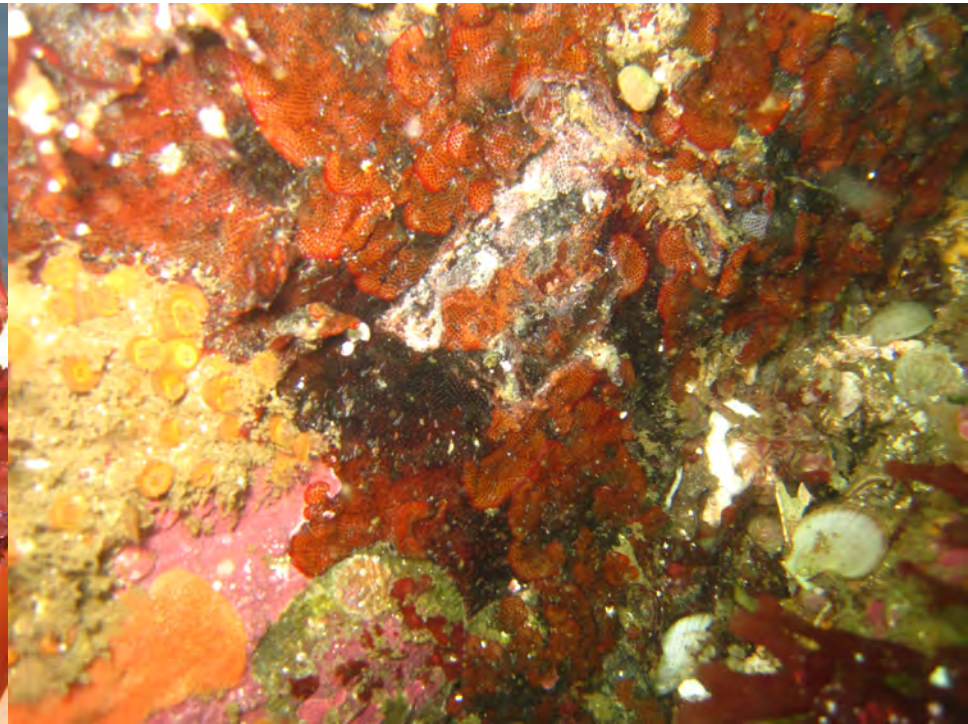
Dispersal: larvae ≤ 1 d; hull fouling; AND...

Study objective

Estimate *in situ* growth rate of *Watersipora*

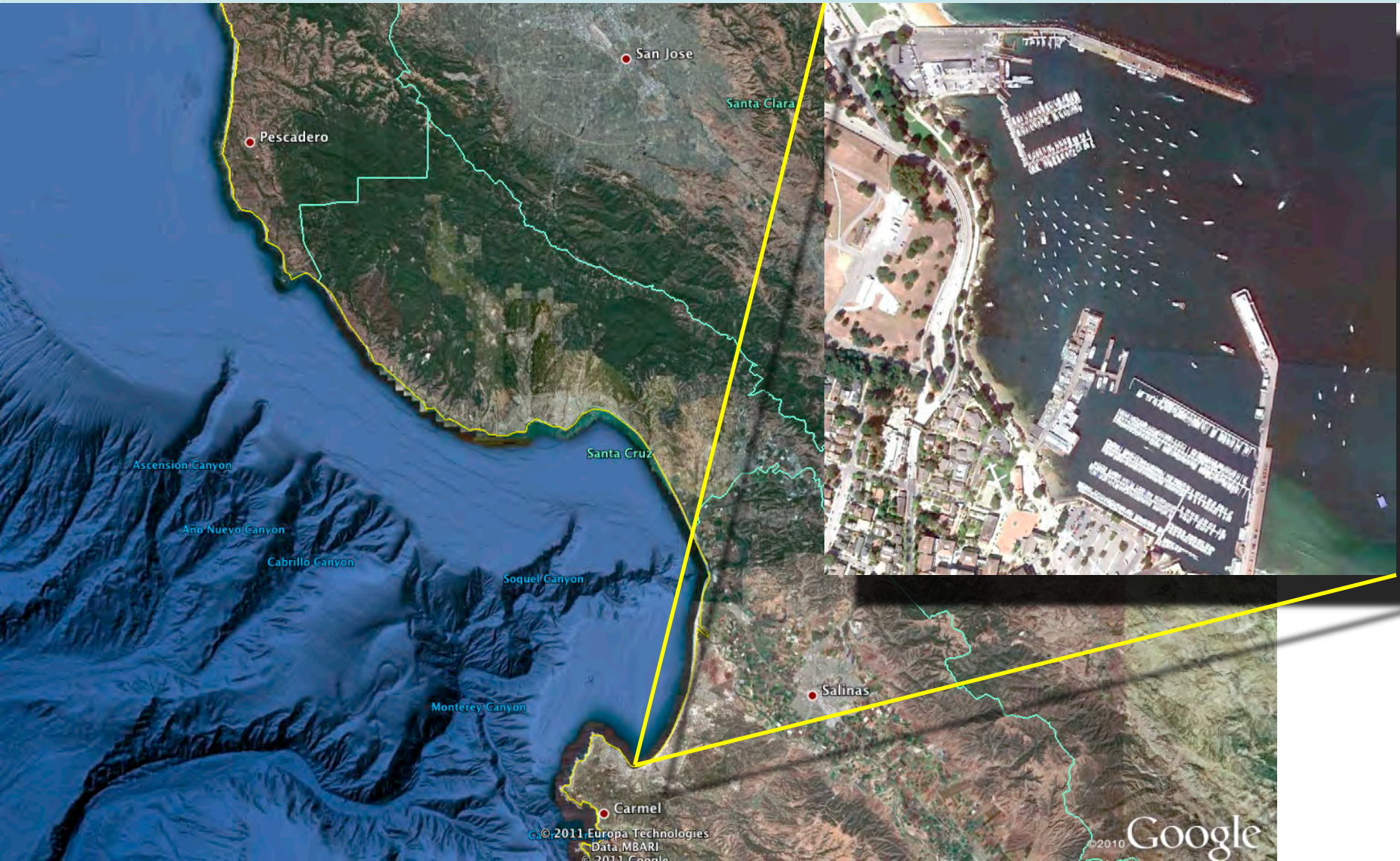


Foliose form



and crustose, sheet-like form

Monterey, CA



Monterey Wharf & Harbor



Study site location

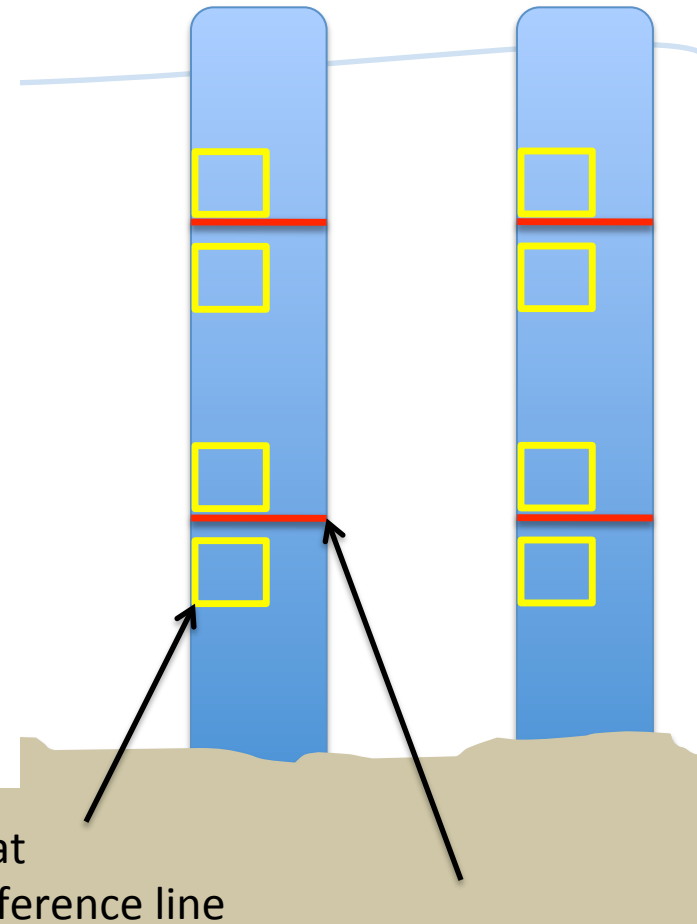


Fixed plot design

2 quadrats per side
4 sides
2 depths
x 2 pilings
= 32 samples per date

Sampling dates:

Feb 22, 2010 (time 1, 0 d)
Mar 05, 2010 (time 2, 11 d interval)
Mar 18, 2010 (time 3, 13 d interval)
Apr 02, 2010 (time 4, 15 d interval)



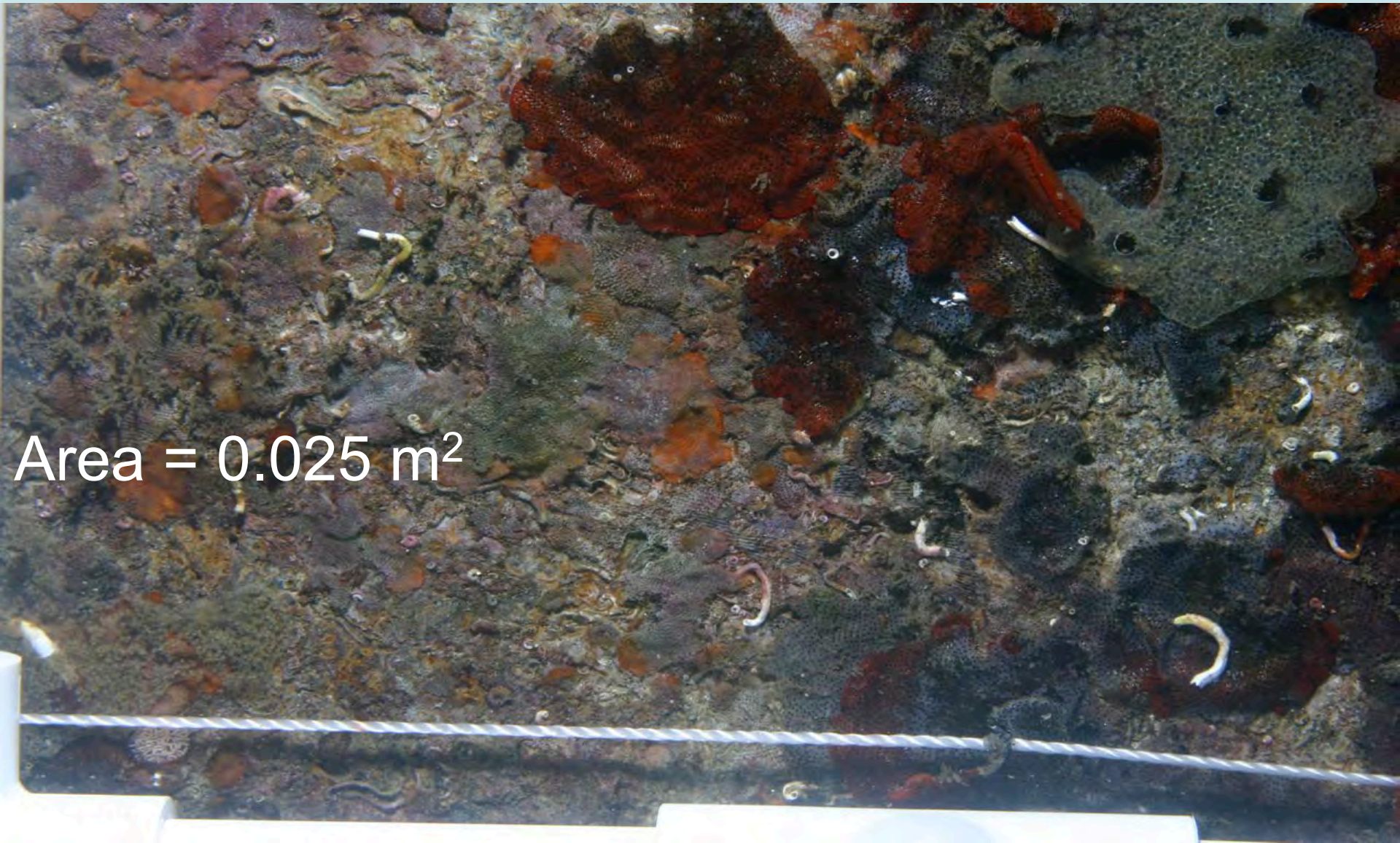
Fixed photo quadrats



Fixed photo quadrats

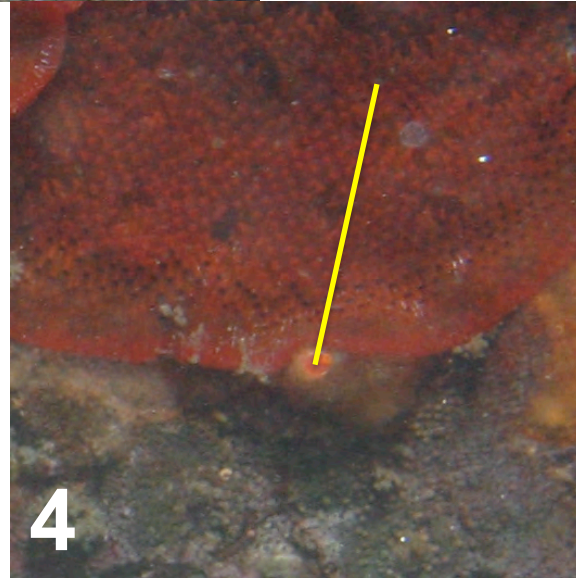
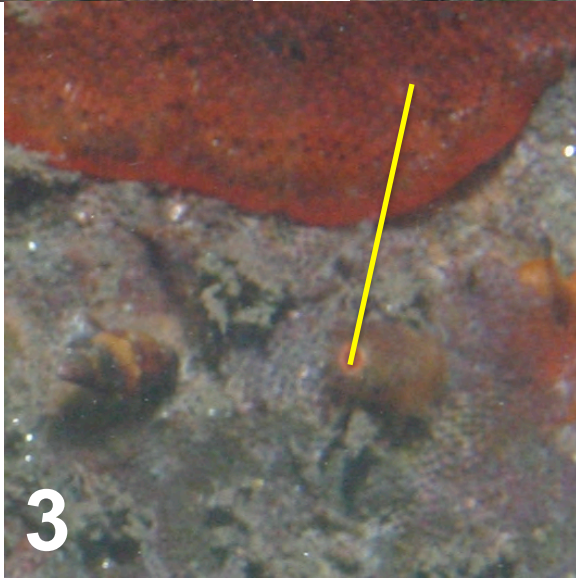
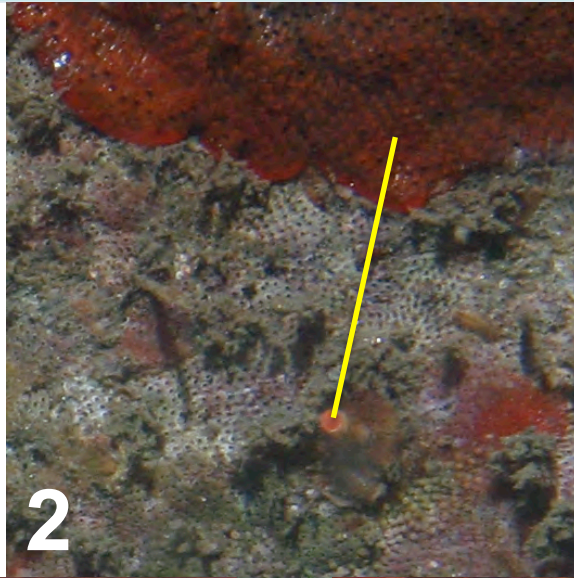
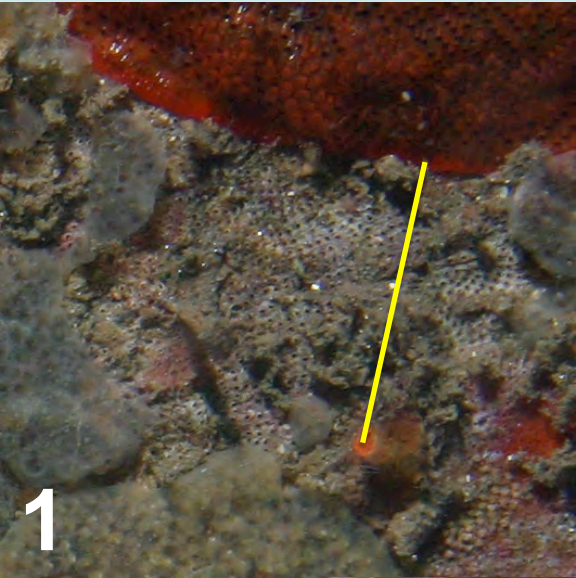


Fixed photo quadrats



Area = 0.025 m²

Watersipora growth



1 vs. 2 = 1.9 mm in 11 d

2 vs. 3 = 4.7 mm in 13 d

3 vs. 4 = 6.1 mm in 15 d

Overall: 0.33 mm/d

Growth rate

In situ growth: 0.1 – 0.4 mm per day

Zooids are generally 0.5 mm long, so colony growth has a maximal rate of nearly a zooid length per day

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