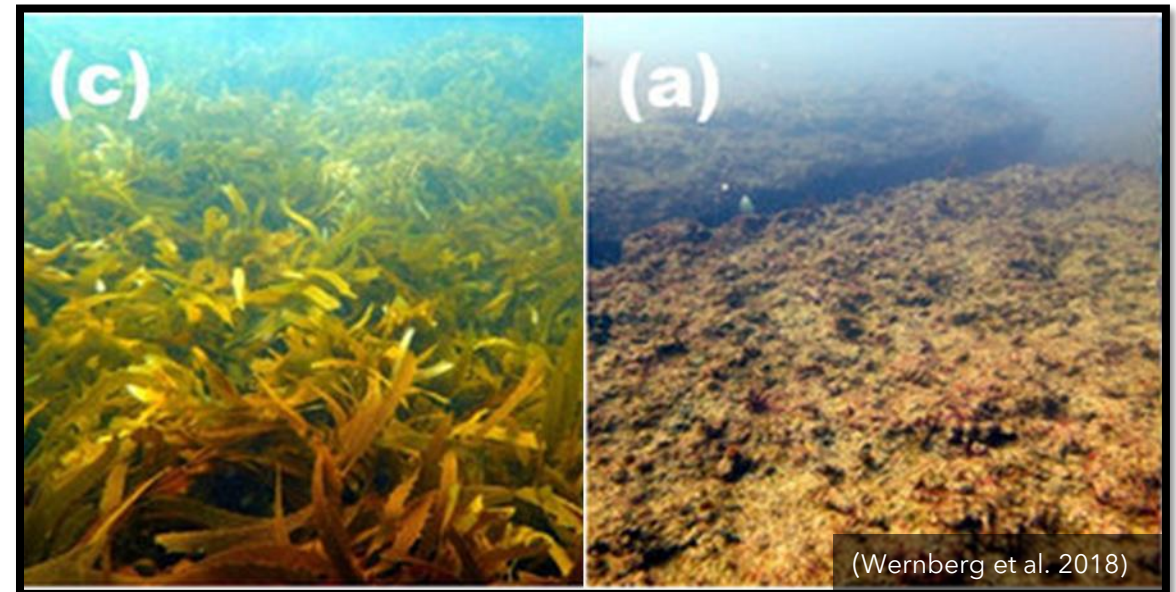


Are warm-edge populations of habitat-forming seaweeds more tolerant to warming?

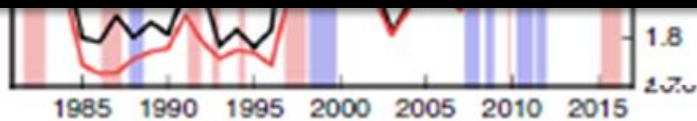
Catalina A. Musrri, Adriana Vergés,
Georgina Wood, Ziggy Marzinelli.



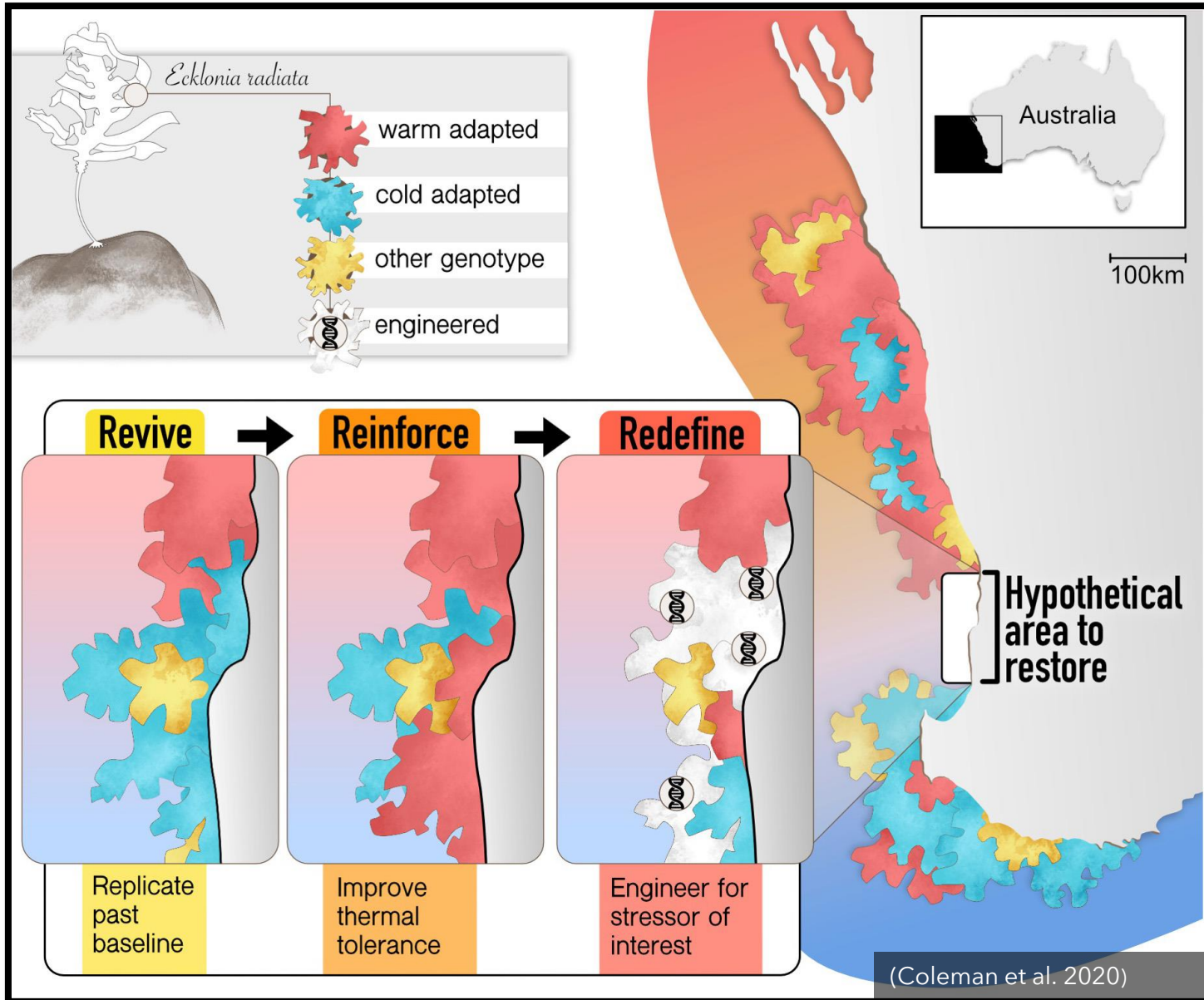
Ocean warming is affecting marine ecosystems



(Oliver et



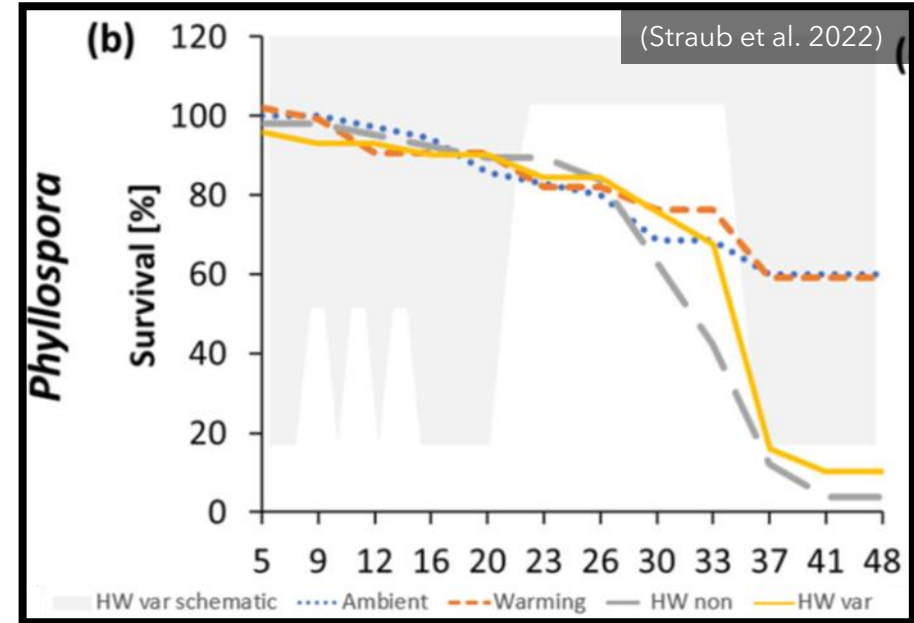
There is a need for Future proofing restoration





The example of Crayweed

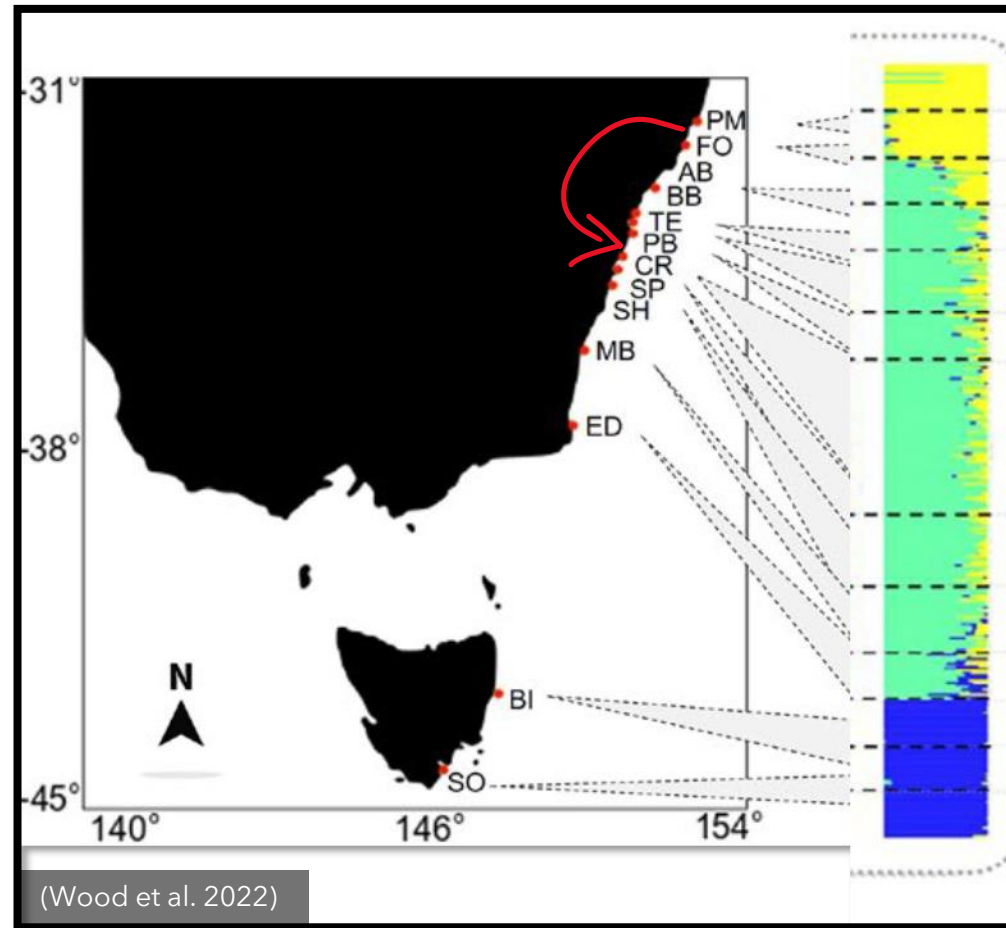
Phyllospora comosa is a fucoid that hosts unique communities and economically important species



- Actively restored by Operation crayweed
- Threatened by climate change (e.g. Straub et al. 2022)

How can we enhance resistance to warming?

- Northern and central populations of crayweed have a different genetic structure
- Genetic background is associated to temperature



Are warm-edge populations of habitat-forming seaweeds more tolerant to increasing temperature?



Under a Marine Heatwave (MHW) scenario...

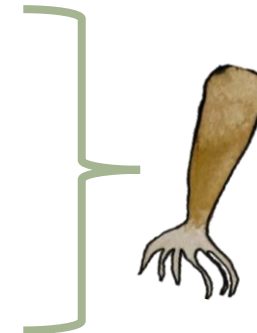
Warm-edge



Survival rate >

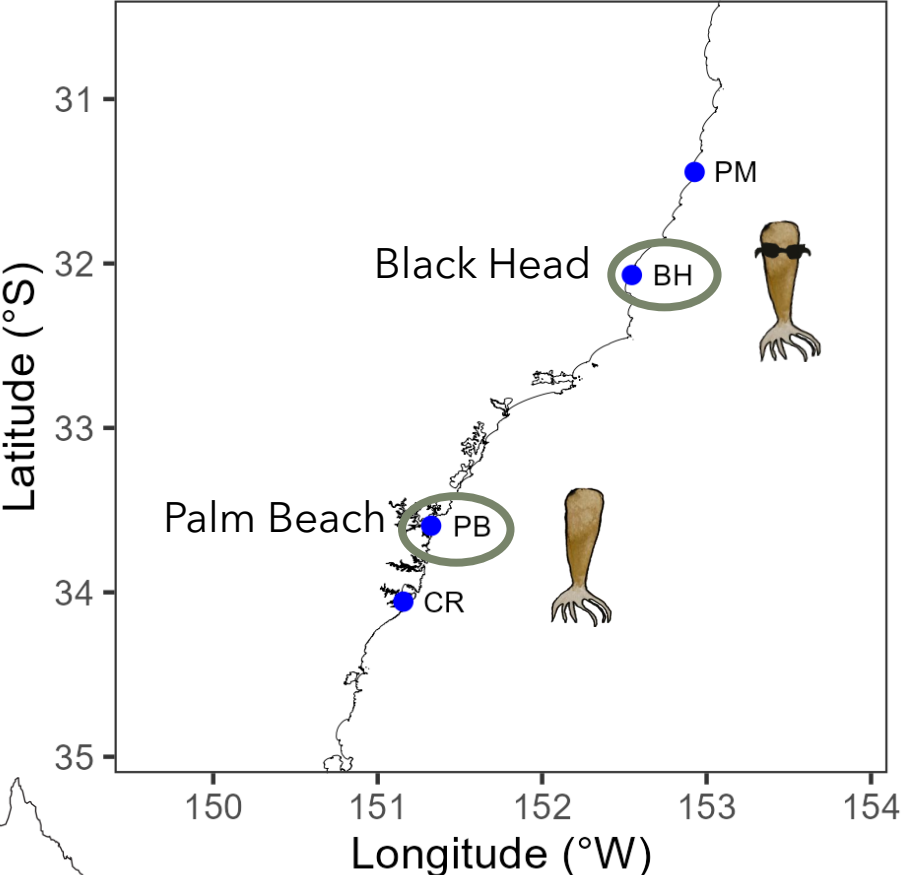
Length >

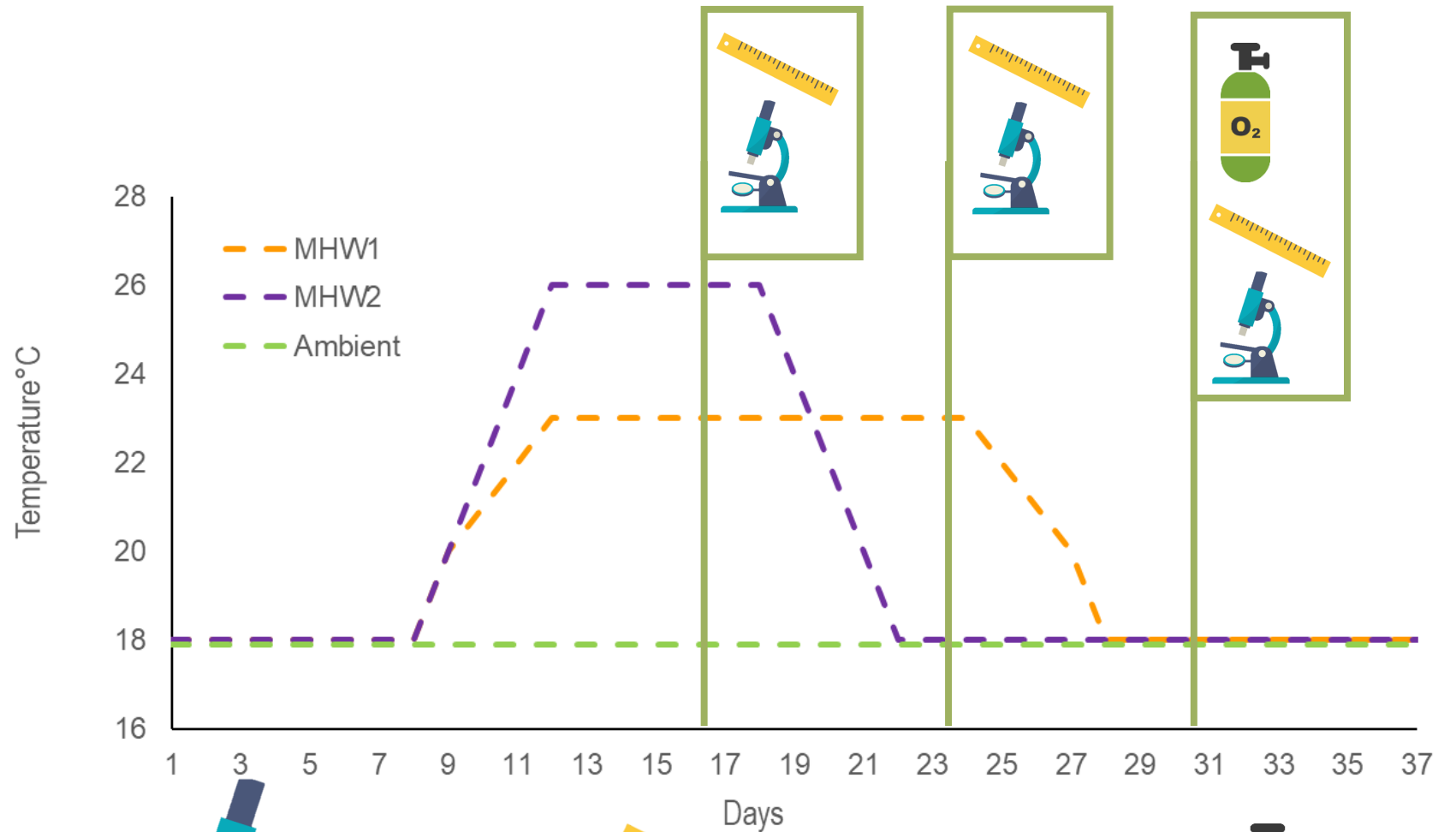
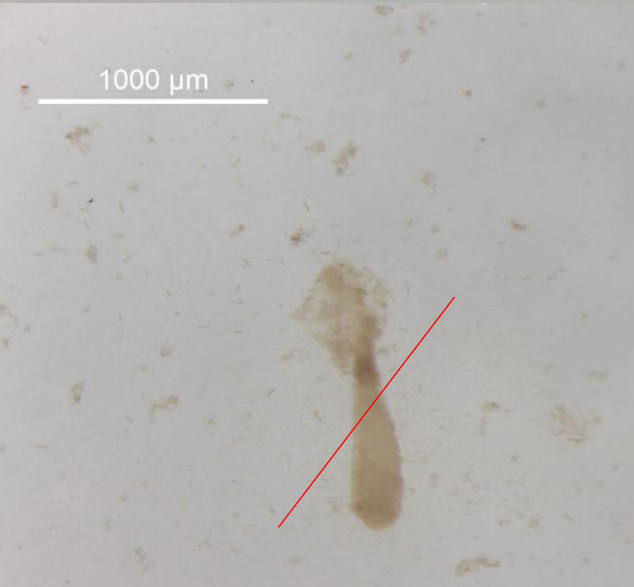
Net production >



Central

Methods: **Treatments and populations**

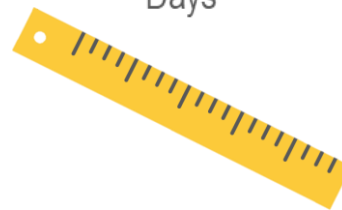




Methods: Responses



Survival



Length (mm)
Area (mm^2)



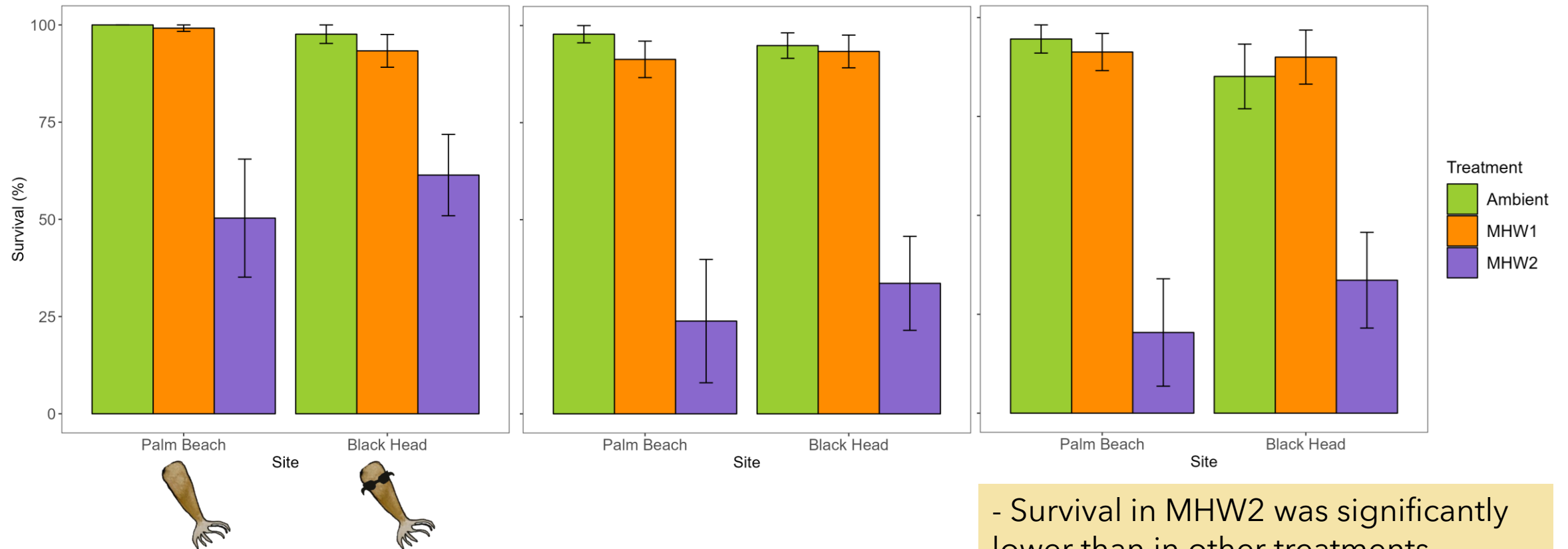
Net
production

Results: Survival

Day 16

Day 23

Day 30



- Survival in MHW2 was significantly lower than in other treatments

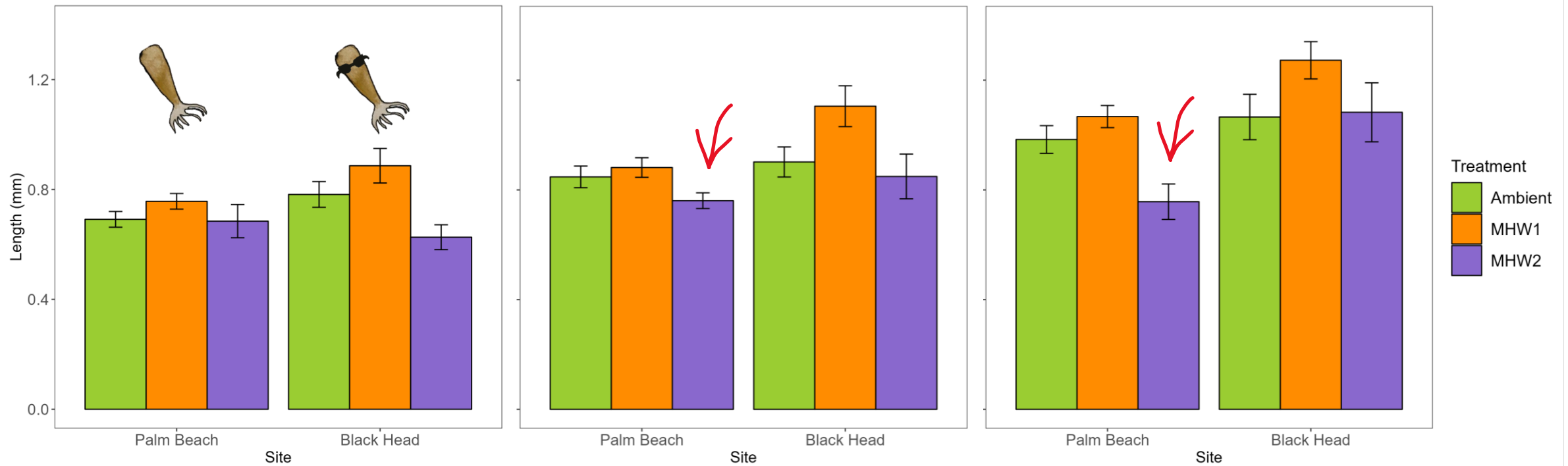
Results: Length



Day 16

Day 23

Day 30

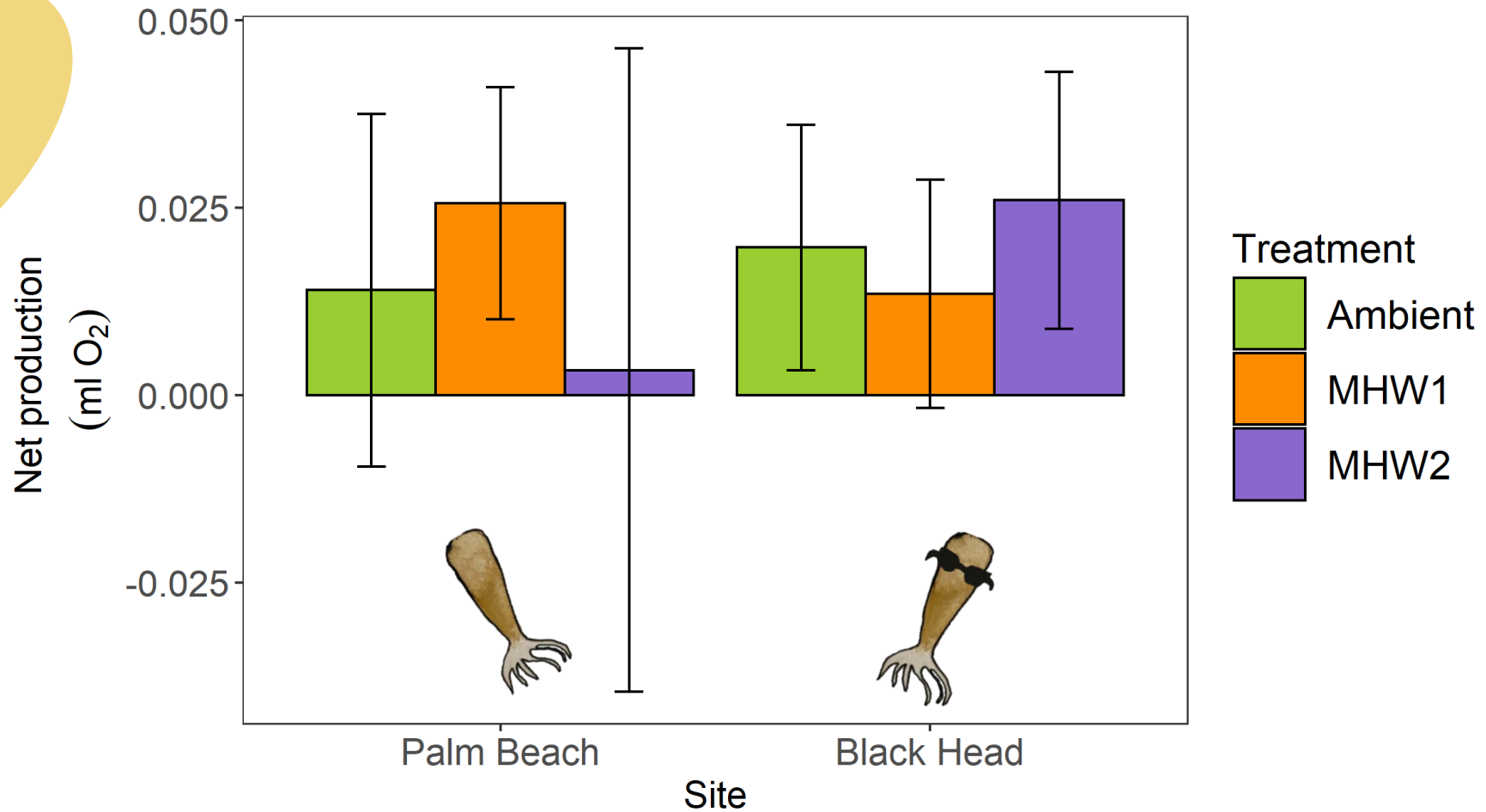


- MHW1 was different from ambient and MHW2
- Black Head and Palm Beach were different

Results: Net production

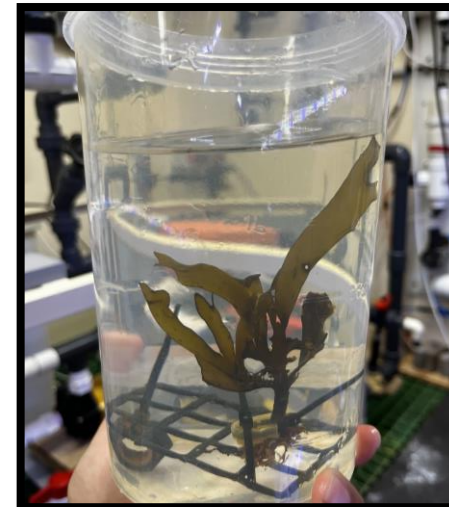
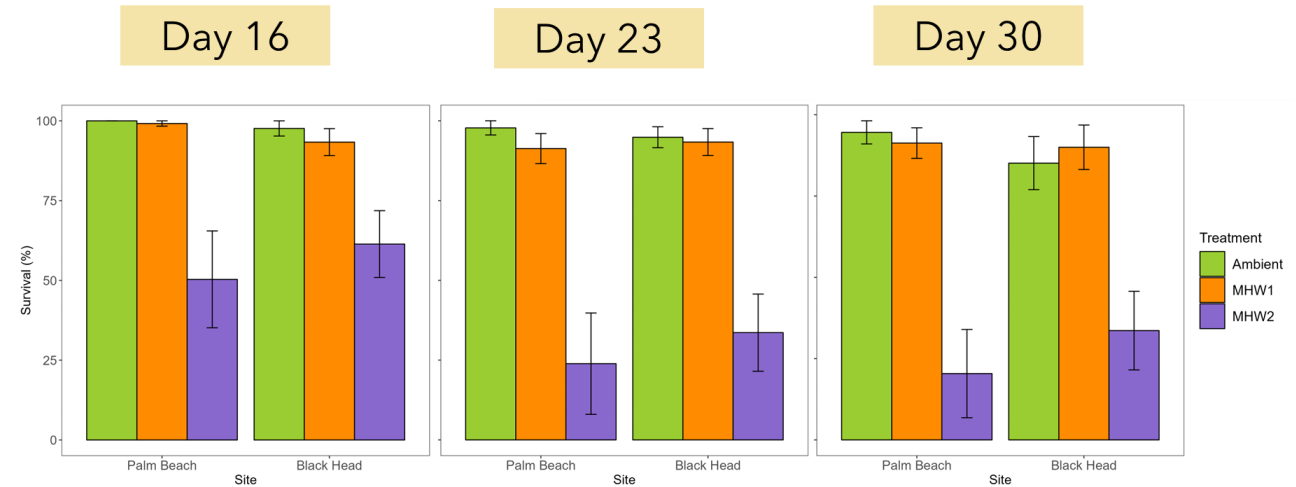


That's variation!



Summary and next steps

- No clear differences between the northern and central populations
- Individuals that survived to 26° might be a different genotype able to resist higher temperatures
- More populations are needed
- Different life stages can have different responses (e.g. Nielsen et al. 2014)



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