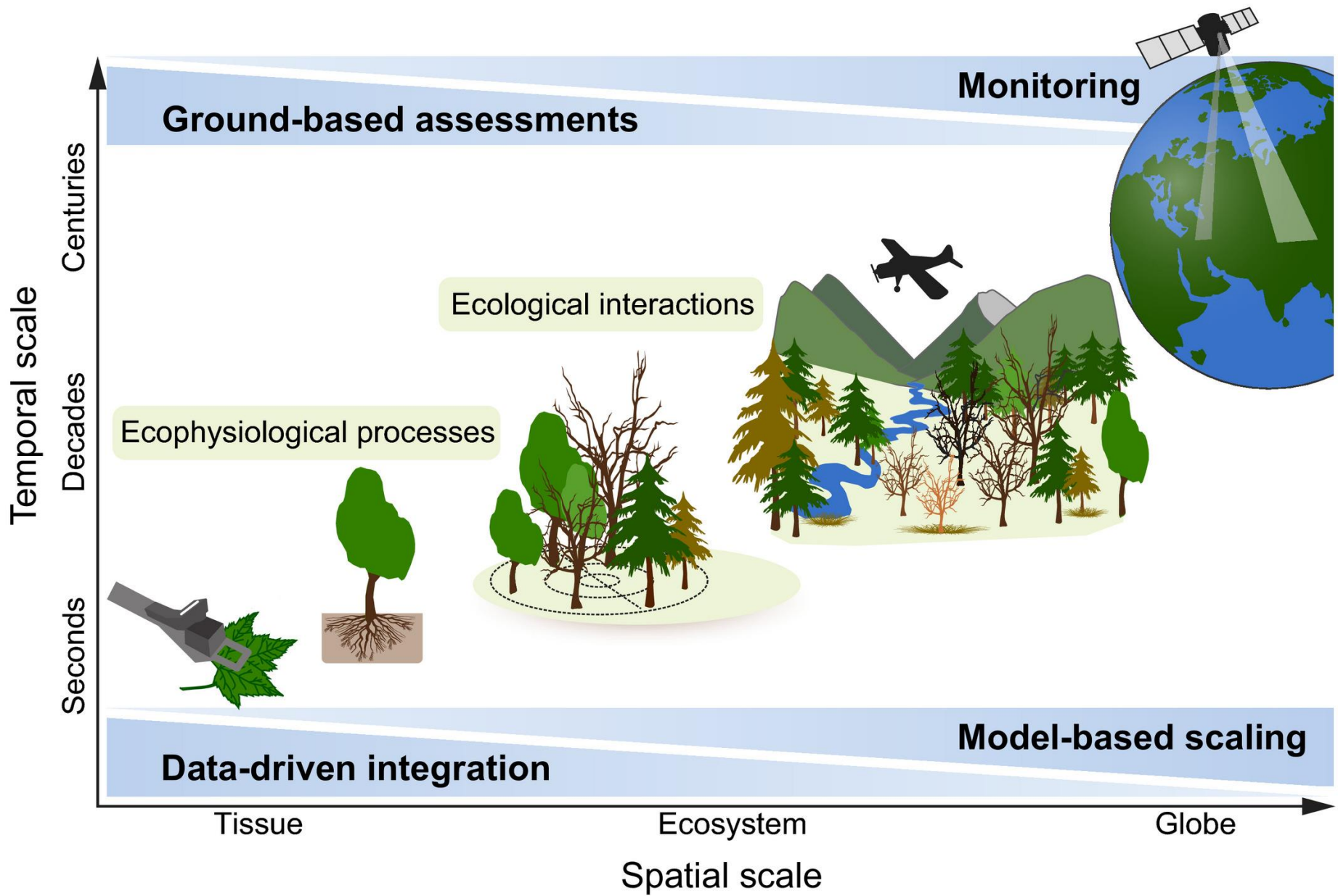
A photograph of a sand dune covered in sparse, dry-looking grasses under a clear blue sky. The dune is a light tan color, and the grasses are a mix of green and brown. The sky is a solid, clear blue. The text is overlaid on the lower half of the image.

Monitoring the threat status of active
dune ecosystems and pīkao
populations with remote sensing

Cate Ryan



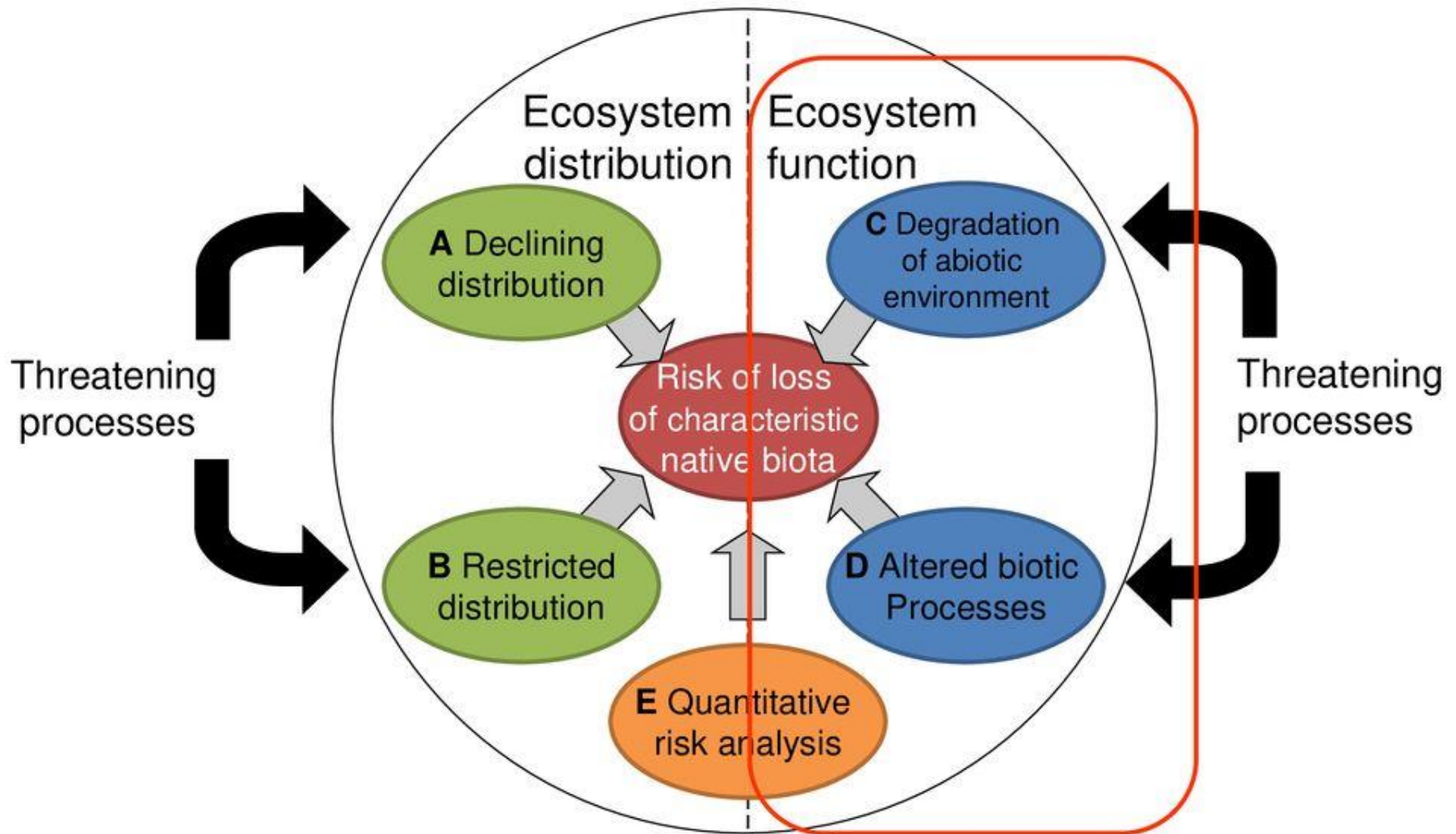
Photo:Coastline Consultants



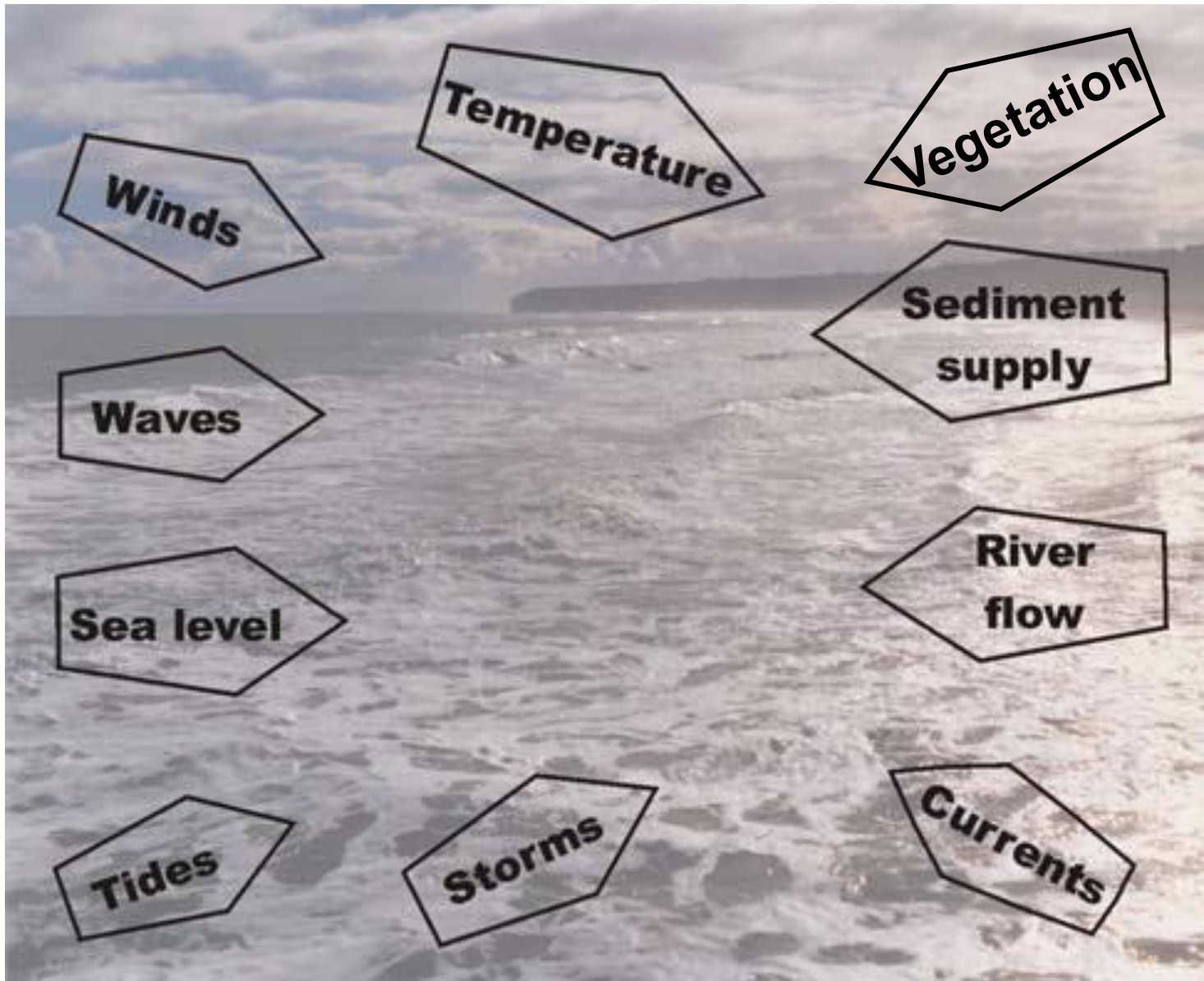
My research questions

1. What are the key indicators of the threat status of active dune ecosystems, that can be sensed remotely?
2. What are the indicator thresholds of decline and collapse?
3. What are the optimal temporal and spatial scales for national monitoring of active dune ecosystems?

Model of Ecosystem Risk Assessment



Functional Symptoms



Winds

Temperature

Vegetation

Waves

**Sediment
supply**

Sea level

**River
flow**

Tides

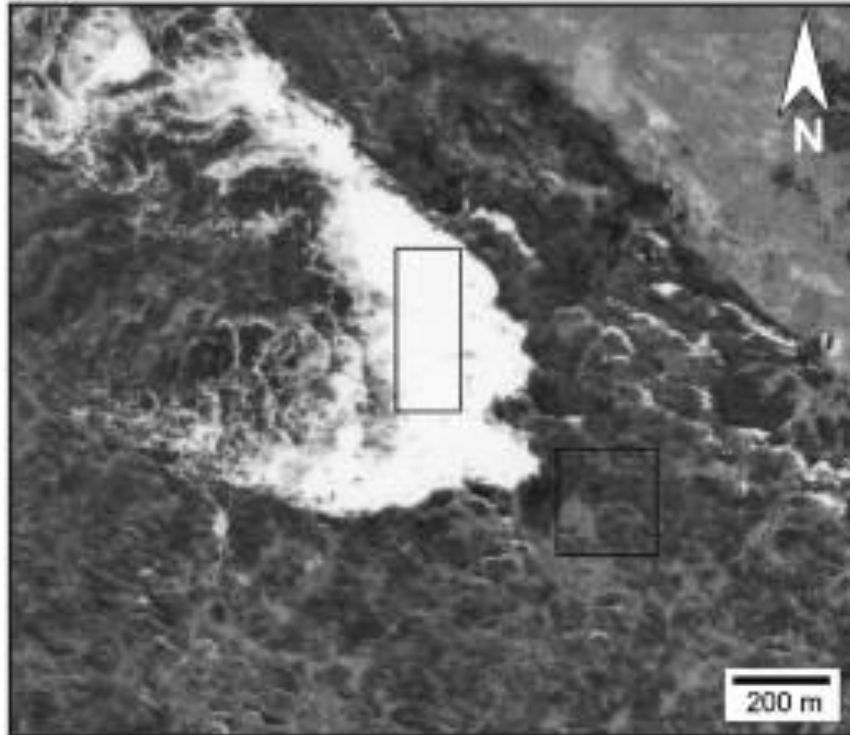
Storms

Currents

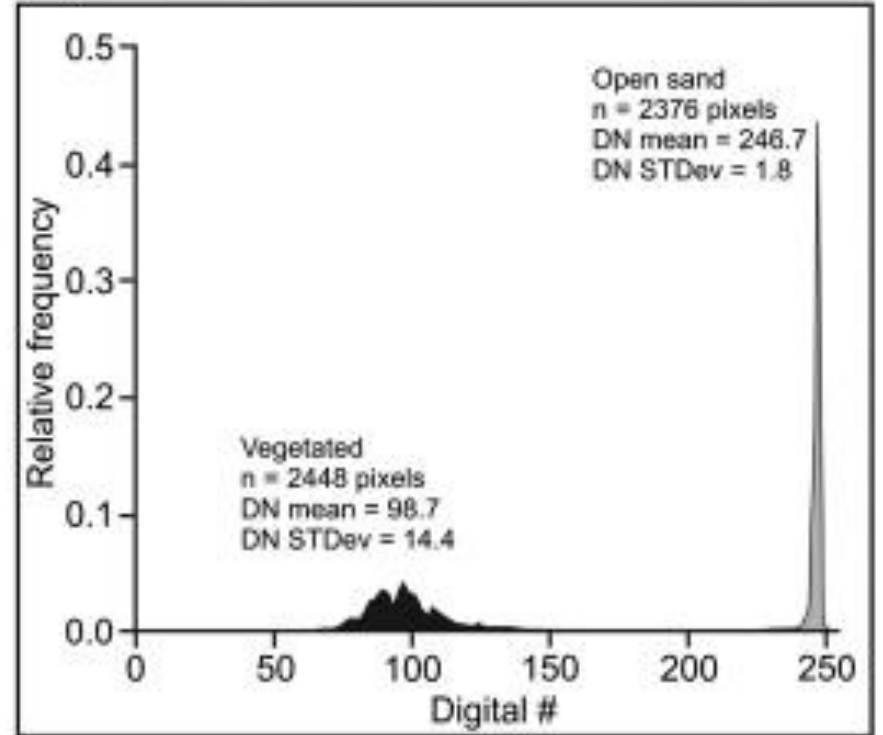
Image: Ministry for the Environment, 2001

Indicator: Vegetation cover

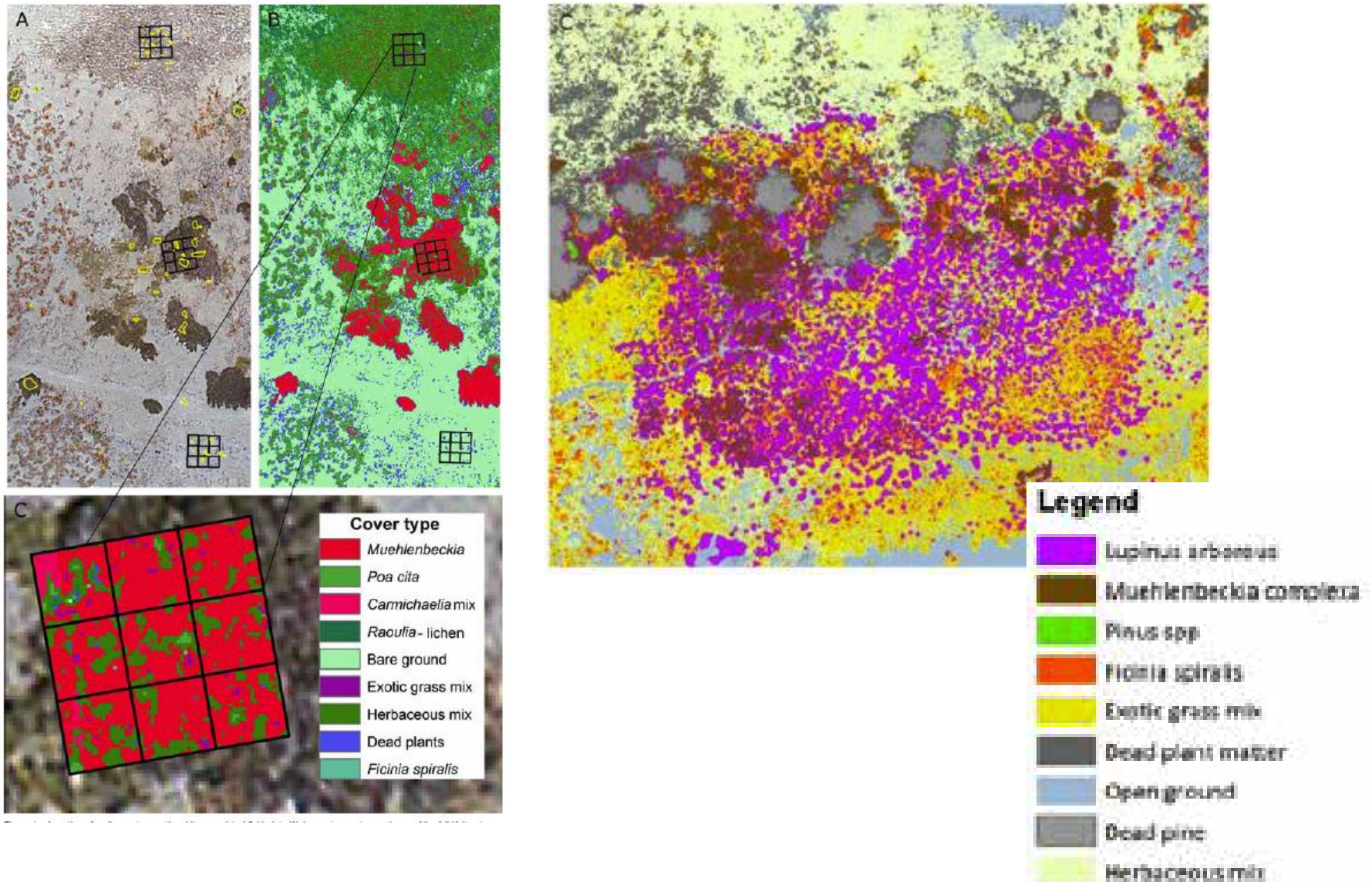
(A)



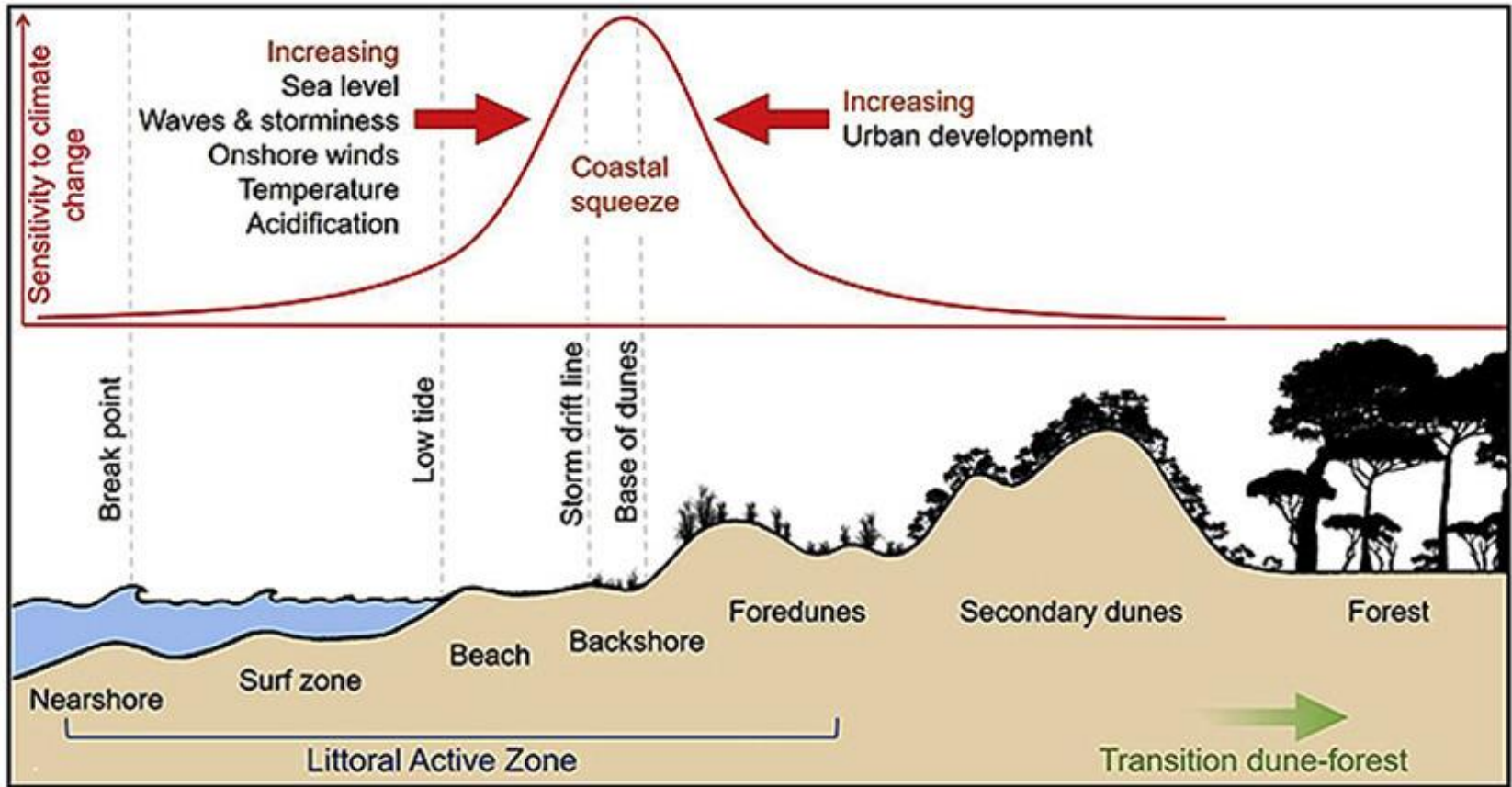
(B)



Indicator: Vegetation composition



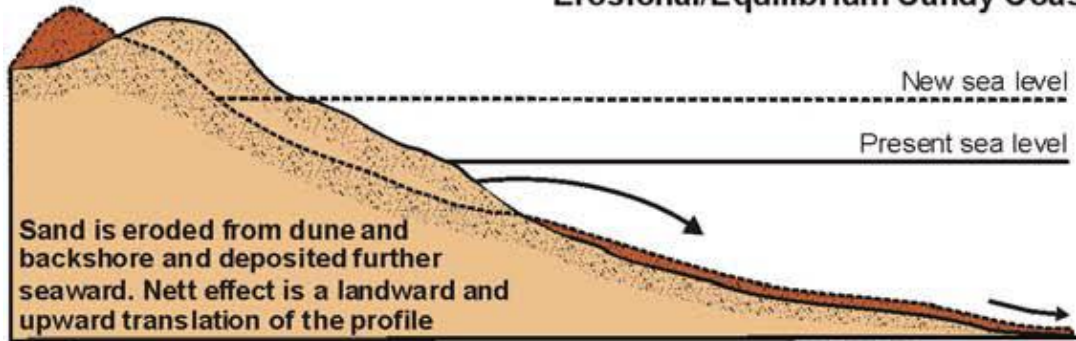
Indicator: Coastal squeeze



Questions/ chats: I'm at
Catherine.ryan@aut.ac.nz

Supplementary slides

Erosional/Equilibrium Sandy Coast



Accreting Sandy Coasts

