The distribution and impact of *Eccritotarsus catarinensis* & *E. eichhorniae* on water hyacinth, in South Africa

Maseko, Z*., Coetzee, J., Hill, M. & Paterson, I.

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

RHODES UNIVERSITY
Grahamstown • 6140 • South Africa

Introduction

- *Pontederia crassipes* (Mart.) Solms (Pontederiaceae) commonly known as water hyacinth

Water hyacinth in South Africa

- The most invasive weed.
- Present since the early 1900s.
- Wide range of ecological, and socio- economic impacts.

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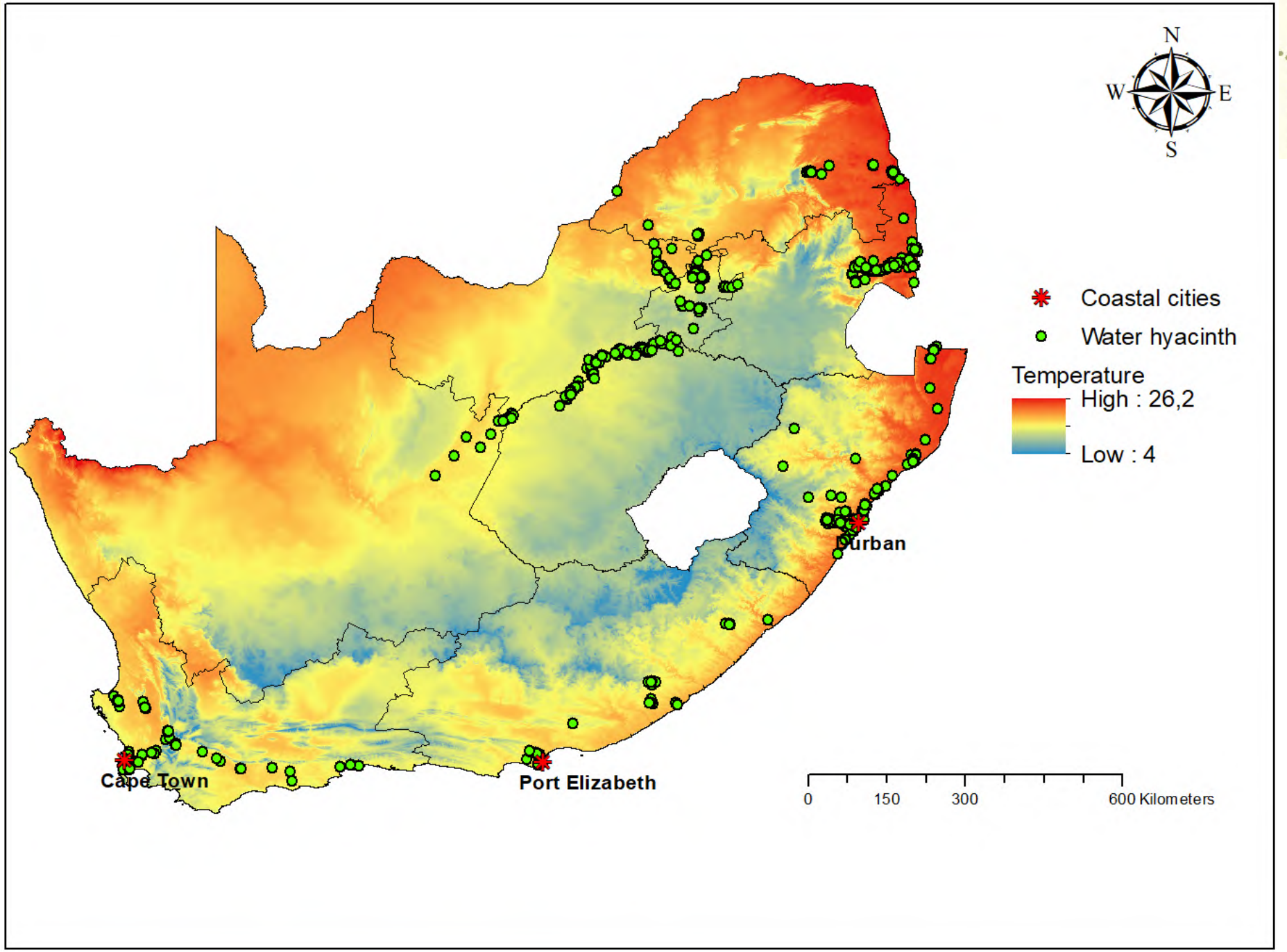
N
W
E
S
Coastal cities
Water hyacinth
Temperature
High : 26,2
Low : 4
Durban
Cape Town
Port Elizabeth
0
150
300
600 Kilometers

Integrated management strategies

Highest number of biocontrol agents on water hyacinth in the world.

CBC

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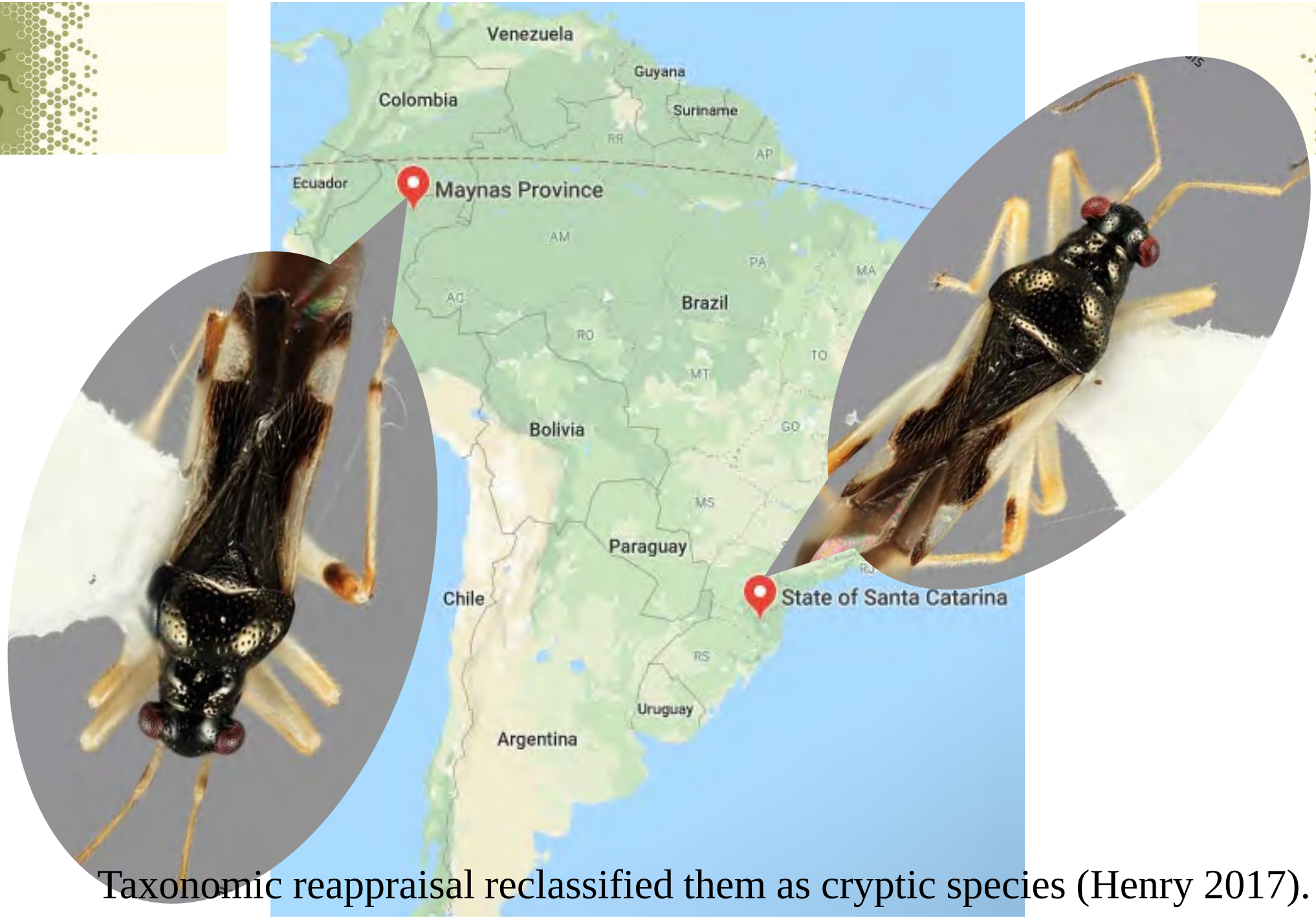
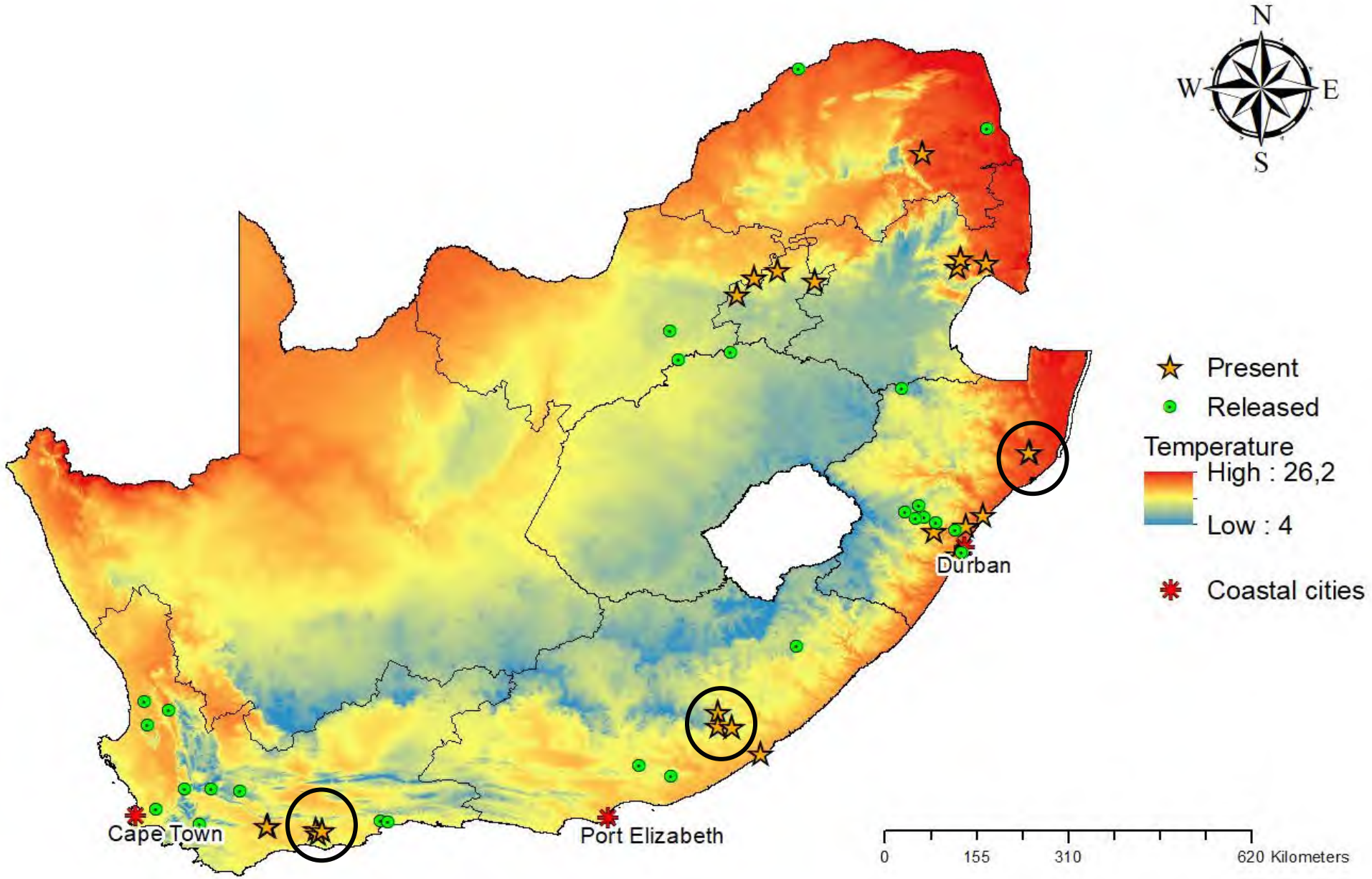
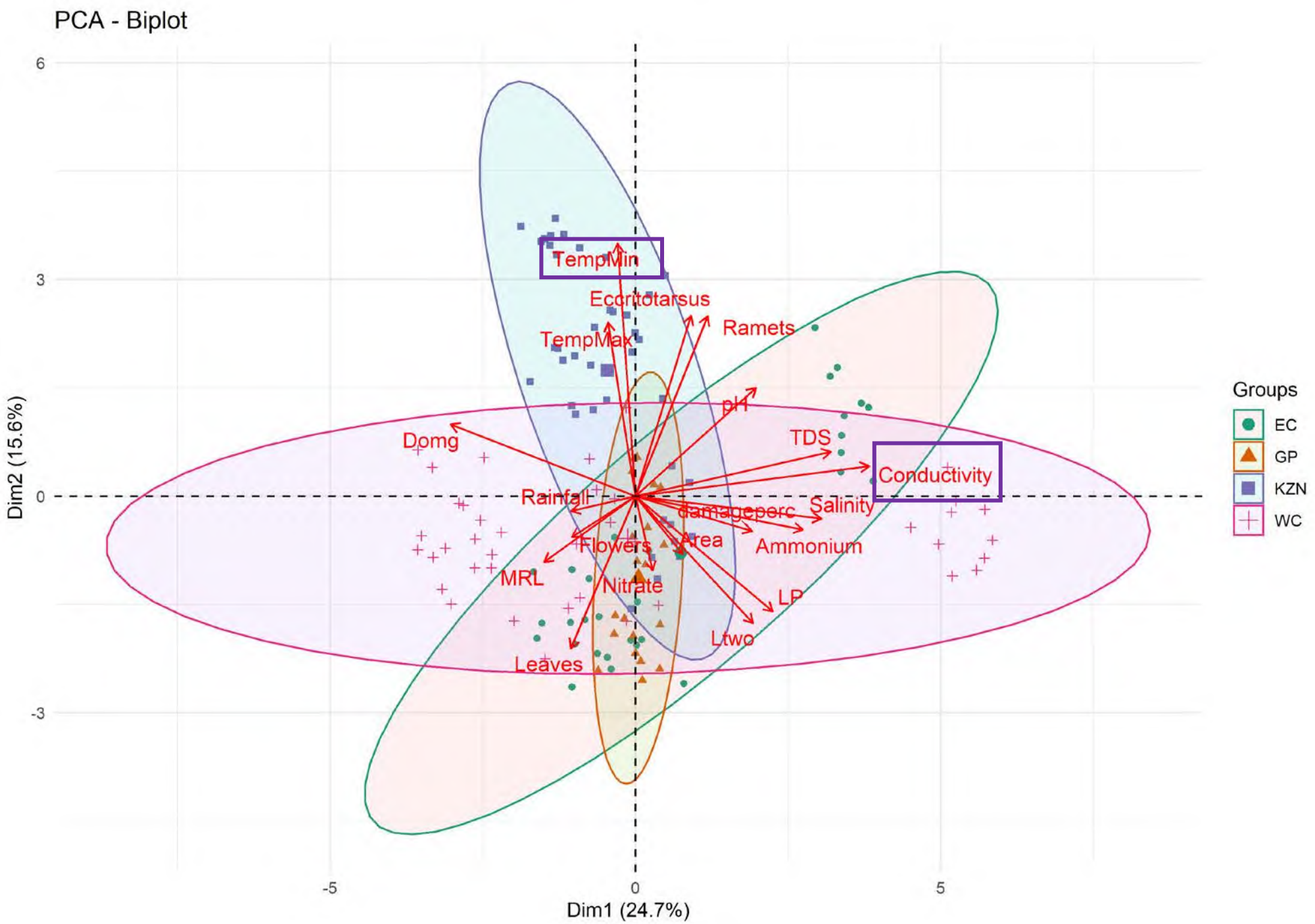
Aims

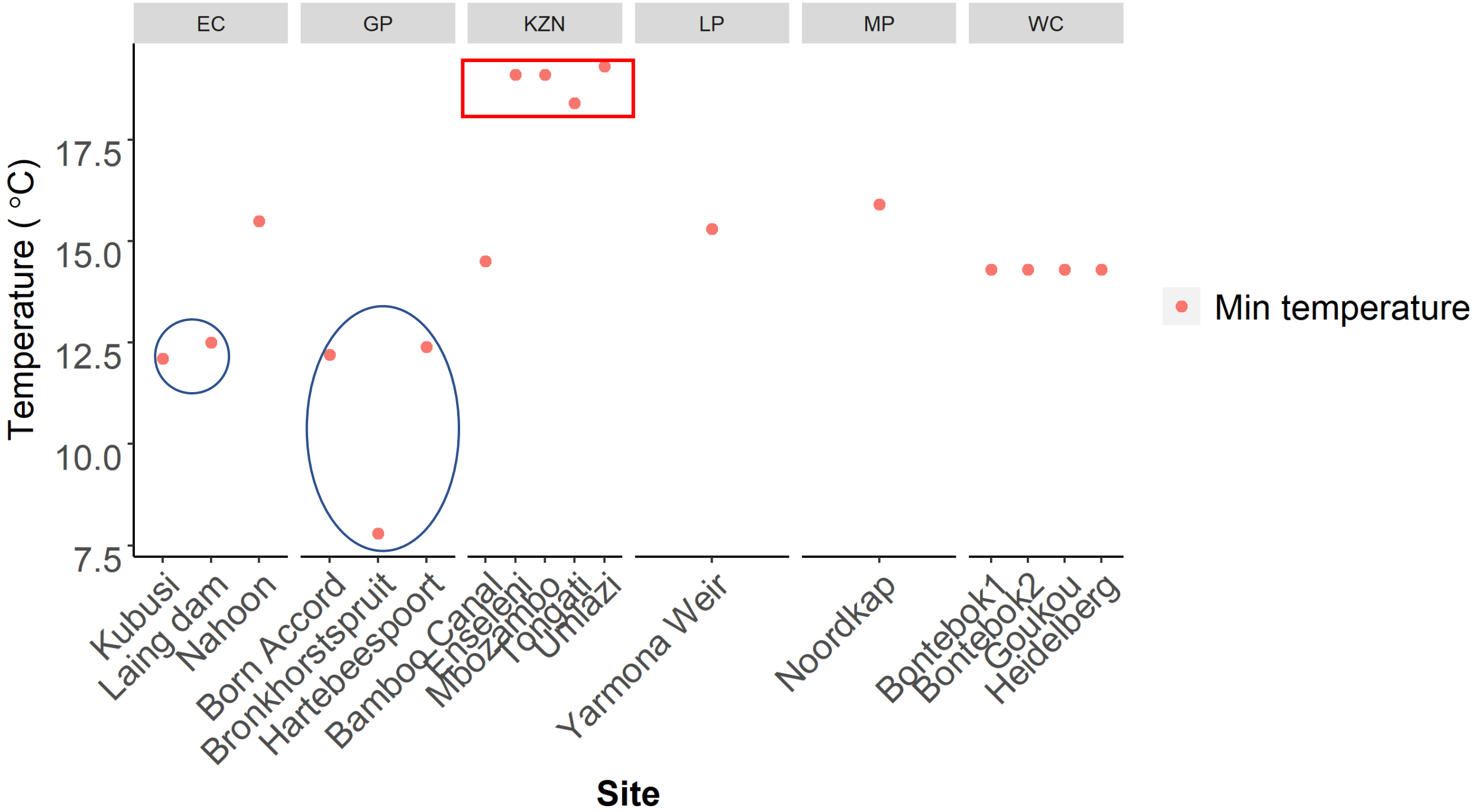
- Post release evaluation of the establishment and distribution of *Eccritotarsus catarinensis*.
- Assess the field impacts of *Eccritotarsus catarinensis*.

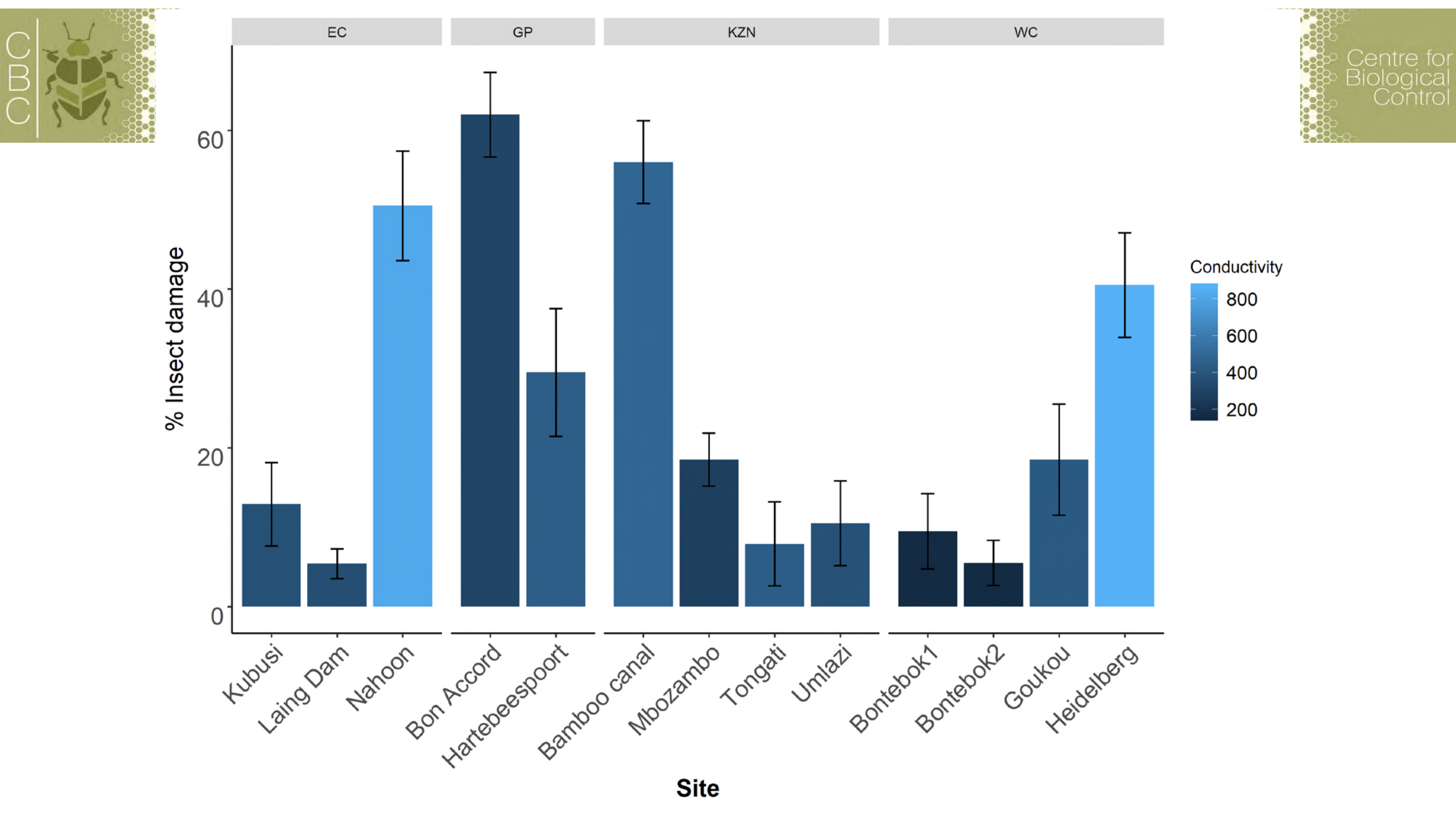


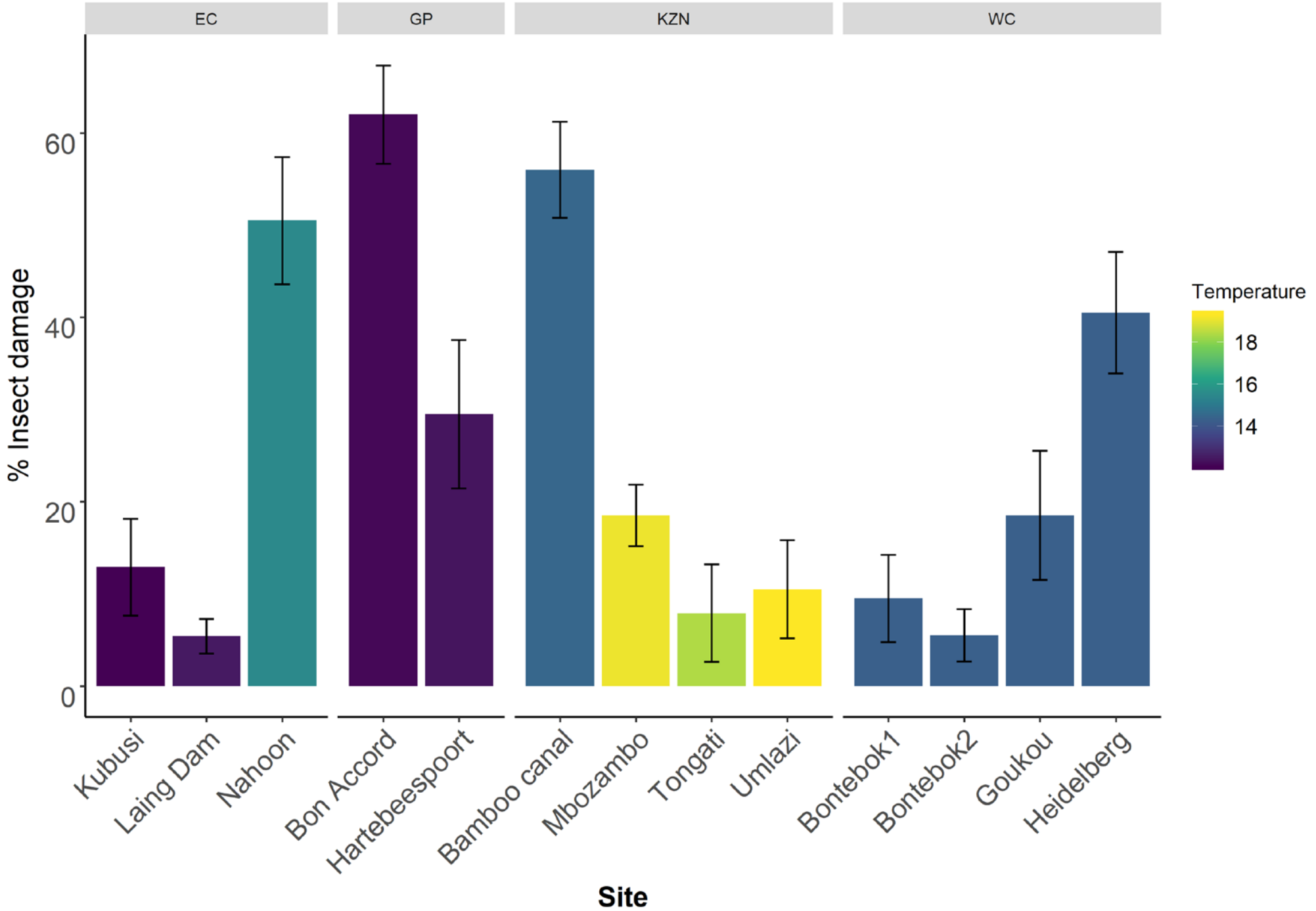
Taxonomic reappraisal reclassified them as cryptic species (Henry 2017).


N
W
E
S
Present
Released
Temperature
High : 26,2
Low : 4
Coastal cities
Durban
Cape Town
Port Elizabeth
0
155
310
620 Kilometers


PCA - Biplot
TempMin
Ecoritotarsus
TempMax
Ramets
pH
TDS
Conductivity
Domg
Rainfall
Salinity
damageperc
Area
Flowers
Ammonium
MRL
Nitrate
LP
Ltwo
Leaves
Groups
EC
GP
KZN
WC
Dim2 (15.6%)
Dim1 (24.7%)
6
3
0
-3
-5
0
5


EC
GP
KZN
LP
MP
WC
Temperature (°C)
17.5
15.0
12.5
10.0
7.5
Kubusi
Laing dam
Nahoon
Born Accord
Bronkhorstspruit
Hartebeespoort
Bamboo Canal
Enseleni
Mbozambo
Tongati
Umlazi
Yarmona Weir
Noordkap
Bontebok1
Bontebok2
Goukou
Heidelberg
Site
Min temperature


EC
GP
KZN
WC
% Insect damage
0
20
40
60
Conductivity
800
600
400
200
Kubusi
Laing Dam
Nahoon
Bon Accord
Hartebeespoort
Bamboo canal
Mbozambo
Tongati
Umlazi
Bontebok1
Bontebok2
Goukou
Heidelberg
Site


EC
GP
KZN
WC
% Insect damage
0
20
40
60
Temperature
18
16
14
Kubusi
Laing Dam
Nahoon
Bon Accord
Hartebeespoort
Bamboo canal
Mbozambo
Tongati
Umlazi
Bontebok1
Bontebok2
Goukou
Heidelberg
Site

Conclusions

- Most establishment sites found in KwaZulu-Natal which has a warm subtropical climate.
- Thermal plasticity of the insects (Porter et al., 2018)
- Water nutrient status and temperatures had significant influence on insect establishment.
- Molecular work important to distinguish between the two species.
- Further work on impacts of the two species where they coexist in the field.

Thank You!!!

Acknowledgements

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