

WETLANDS OF THE MAPUTALAND COASTAL PLAIN

Definition of a wetland according to South Africa's National Water Act:

'means land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil' (RSA National Water Act 1998:9).

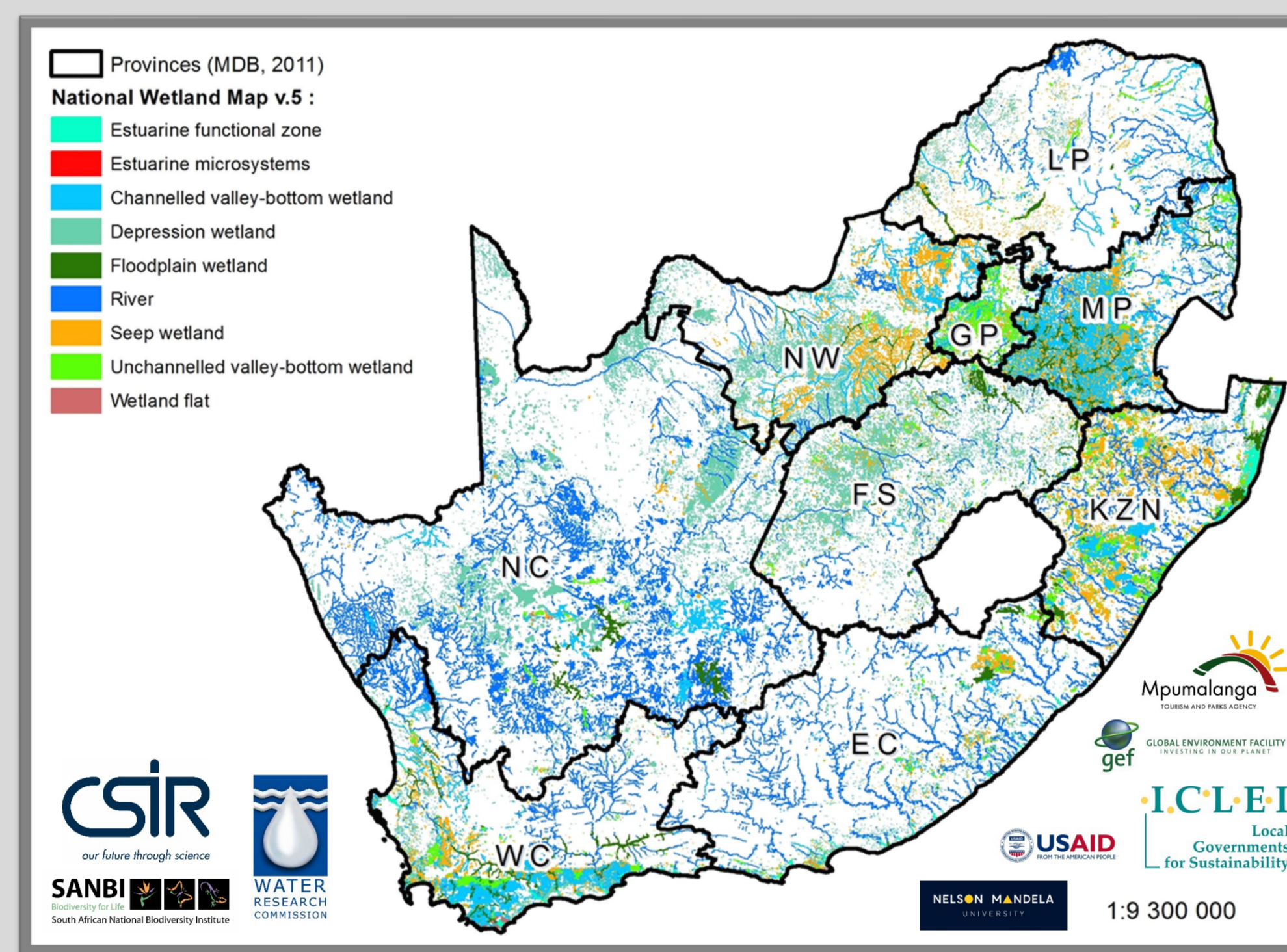
Wetlands are important because:

- They provide water during the year
- Regulate flow throughout the year
- Have peat soils which are nutrient rich for food production



Photo credit: Dr H van Deventer

South Africa has many different types of wetlands, mapped in the National Wetland Map. This is National Wetland Map version 5 (Van Deventer et al., 2019).



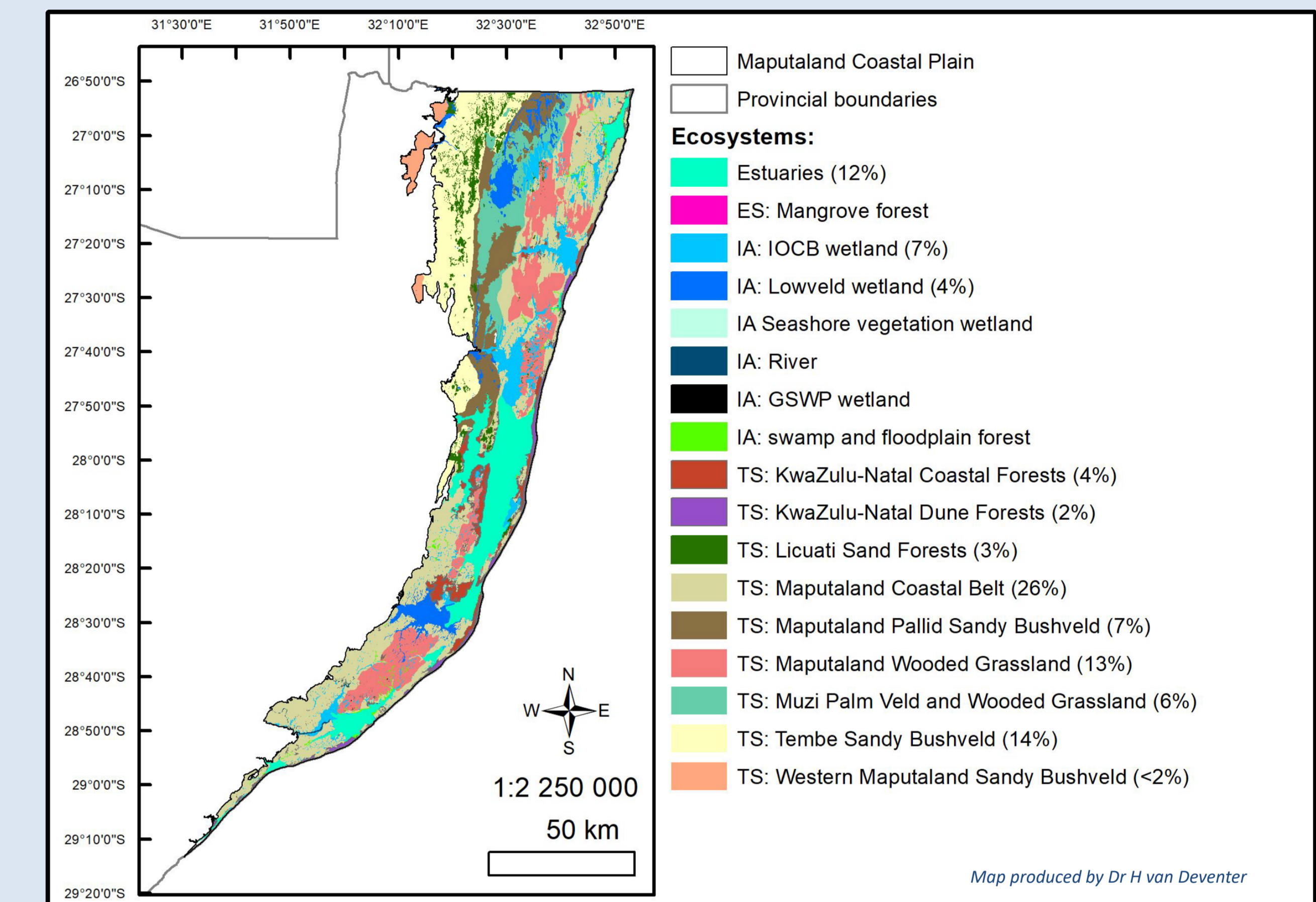
Purpose of our project:

1. Improve the mapping of the extent and types of wetlands of the Maputaland Coastal Plain:

- To verify the location and type of wetlands on the Maputaland Coastal Plain
- To understand where wetlands are degraded and could be restored

2. Undertake a knowledge exchange with land owners, to learn about their wetlands and which ones are important to them.

- This will entail discussions with two Traditional Authorities
- Mapping on paper the different, important and degraded wetland types.



We get different types of wetlands:

Lake Sibaya (Photo credit: Susan Janse van Rensburg, August 2018).



- Lacustrine or open water wetlands
- Vegetated wetlands, covered by trees, large shrubs or macrophytes and otherwise grasses and sedges



Photo credit: Prof JF Durand



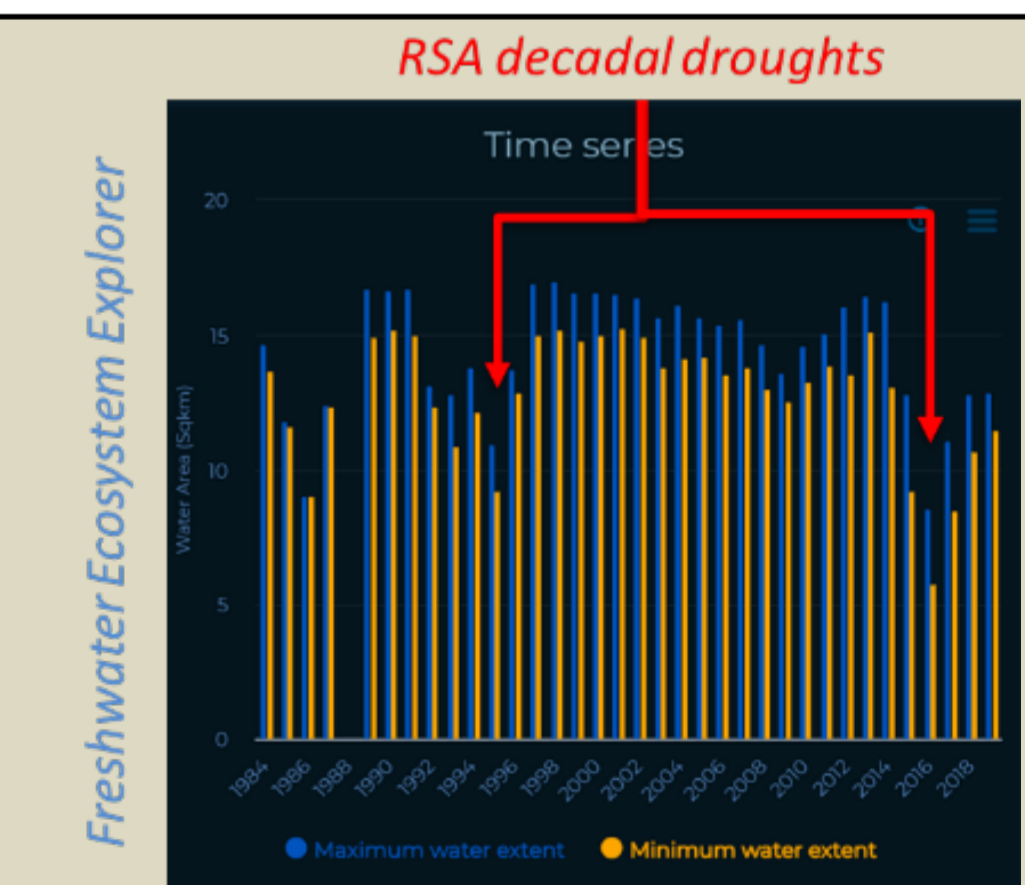
Photo credit: Dr H van Deventer



Photo credit: Prof JF Durand

We use satellite data (camera's on satellites which revolve around the earth) to take pictures of the landscape. From these images we can detect and monitor changes in wetlands. The graph shows how water levels on the Maputaland Coastal Plain has changed over time. We can see in which years there were drought, compared to wetter years.

Droughts result in a decrease in water levels, making wetlands more accessible. In some places, people then access these lands, drain the water, and use it for crops. Degraded, desiccated wetlands may ignite and burn, causing severe loss of carbon, and reduce their ability to regulate floods in the future.



Aerial photo of the burning Vasi North Peatland. Photo was taken on 6 September 2017 from west to east.

Grundling, P.-L. & Grundling, A. 2019. Appendix C: Peat Pressures. In: Van Deventer et al. South African National Biodiversity Assessment 2018: Technical Report. Volume 2b: Inland Aquatic (Freshwater) Realm. CSIR report number CSIR/NRE/ECOS/IR/2019/0004/A. South African National Biodiversity Institute, Pretoria. <http://hdl.handle.net/20.500.12143/6230>



Janse van Rensburg, S. 2019. NBA, 2018. <http://hdl.handle.net/20.500.12143/6230>.

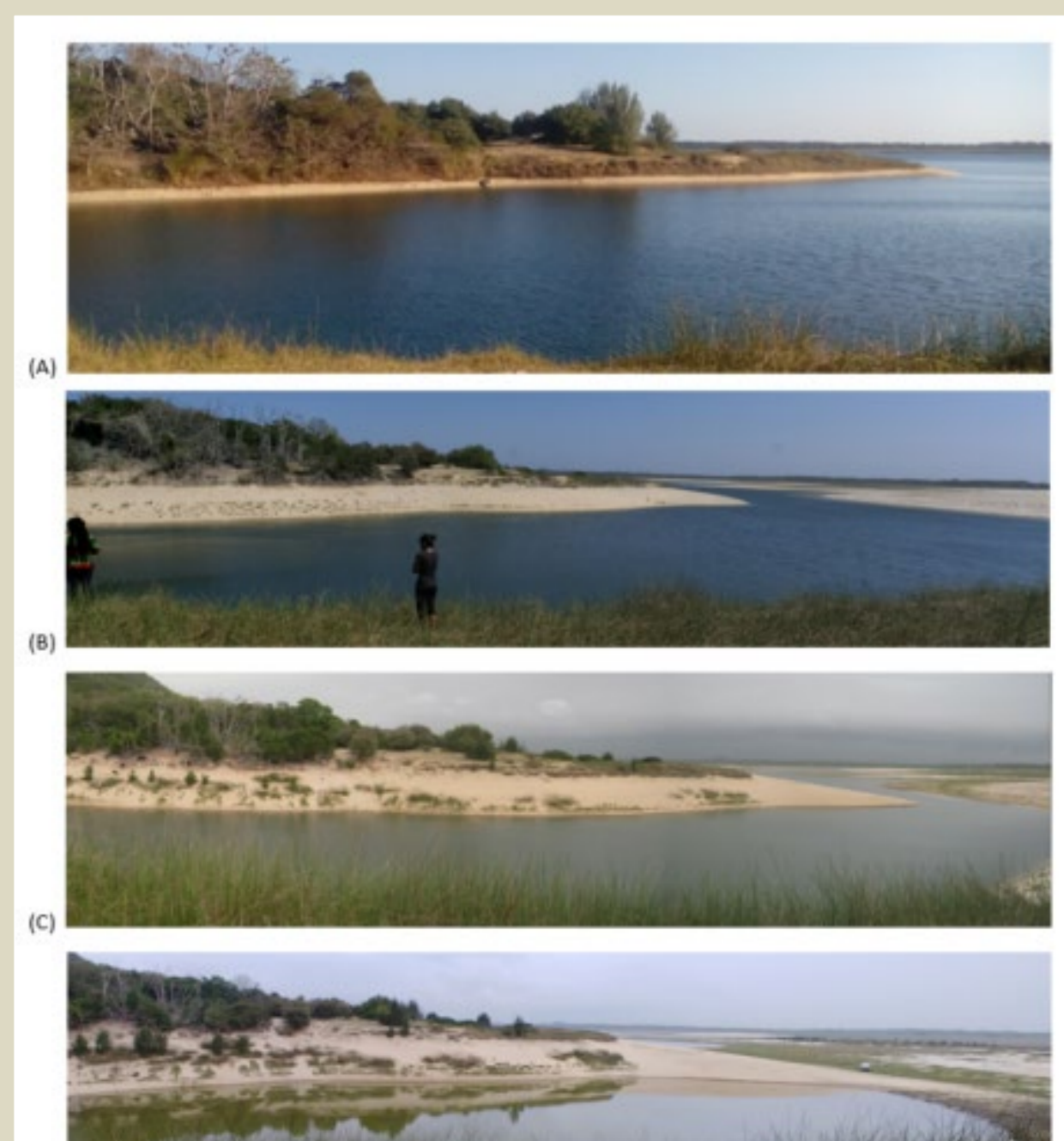


Figure 9.3.3. Swamp forest being cleared and drained just inside the Glanggafu Park near Sakhona Bay just upstream of 'Tide in Hat' (B). Desiccated stream being channelled (C) and (D) = swamp forest recently cleared, while (A) and (E) being drained (Photo: Susan Janse van Rensburg, October 2018).

TWELVE OF THE THIRTEEN INDOCATOR TREE SPECIES OF FORESTED WETLANDS ON THE MAPUTALAND COASTAL PLAIN, KWAZULU-NATAL, SOUTH AFRICA

Barringtonia racemosa
(Powderpuff tree)



Photo credit: Dr Suzan Oelafse

Photo credit:
<http://pza.sanbi.org/barringtonia-racemosa>

Bridelia micrantha
(Mitzeerie)



Photo credit: <http://pza.sanbi.org/bridelia-micrantha>

Photo credit: Brett Markwell
<https://www.inaturalist.org/observations/76052269> (CC BY-NC 4.0)

Casearia gladiiformis
(Sword-leaf)



Photo credit: Dr Ricky Taylor (CC BY-NC 4.0)
<https://www.inaturalist.org/observations/54280110>

Photo credit: MagdaStLucia
<https://www.inaturalist.org/observations/19401684> (CC BY-NC 4.0)

Cassipourea gummiflua
(Large-leaved Onionwood)



Photo credit: Geoff Nichols (CC BY-NC 4.0)
<https://www.inaturalist.org/observations/58856894>

Ficus sur (Broom-cluster fig)



Photo above was taken by Penelope Brown and submitted to iNaturalist <https://www.inaturalist.org/observations/76095773> (CC BY-NC 4.0)

Photo on the right was taken by Benjamin Fredlund and submitted to iNaturalist <https://www.inaturalist.org/observations/69510463> (CC BY-NC 4.0)

F. trichopoda (Swamp fig)

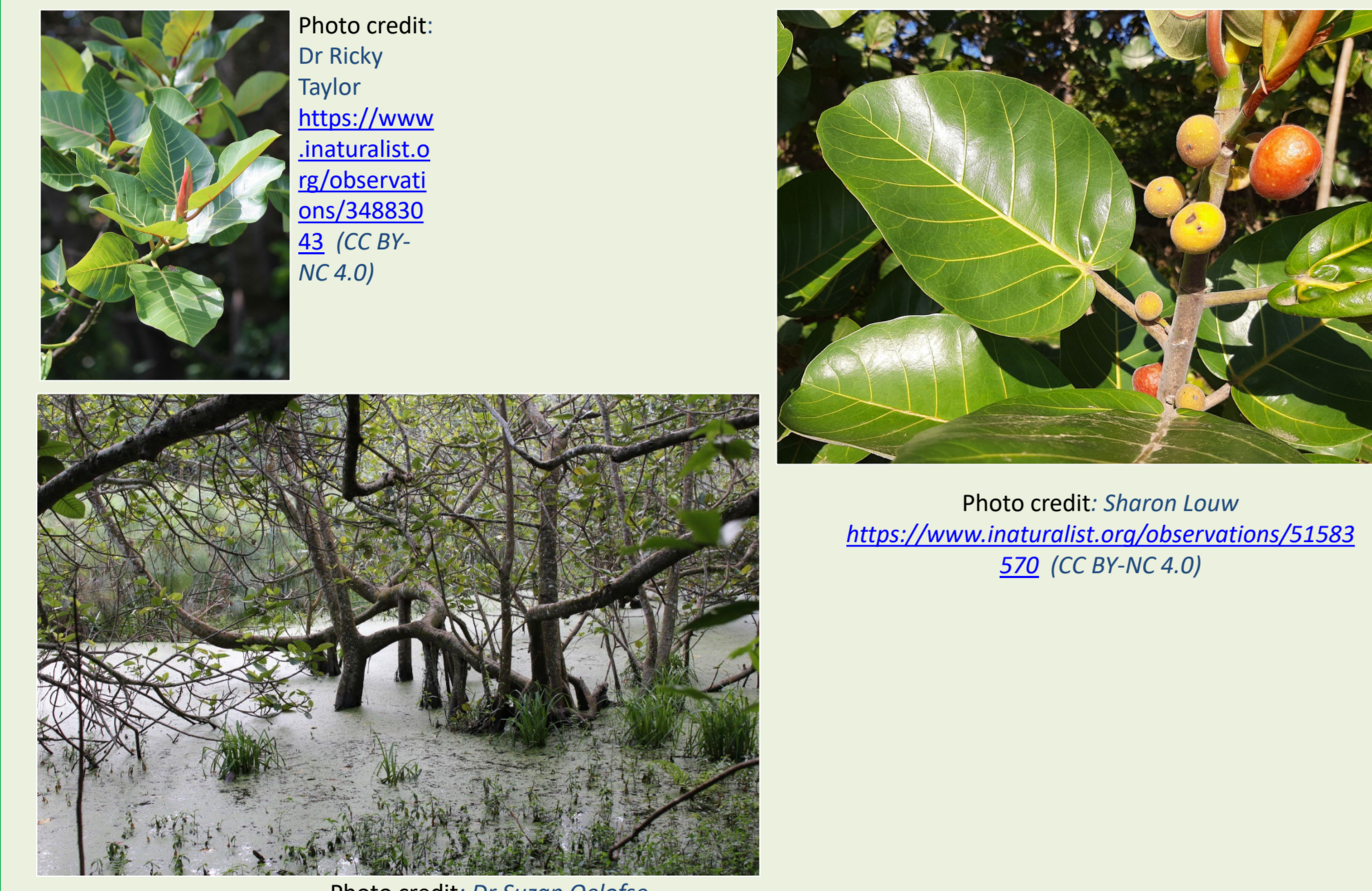


Photo credit: Dr Ricky Taylor
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Photo credit: Sharon Louw
<https://www.inaturalist.org/observations/51583570> (CC BY-NC 4.0)

Photo credit: Dr Suzan Oelafse

Hibiscus tiliaceus (Lagoon hibiscus)



Isikweletu sezithombe: Dr Suzan Oelafse

Photo credit: Dr Ricky Taylor
<https://www.inaturalist.org/observations/11002666> (CC BY-NC 4.0)

Photo credit: Dr Heidi van Deventer

Macaranga capensis
(Wild poplar)

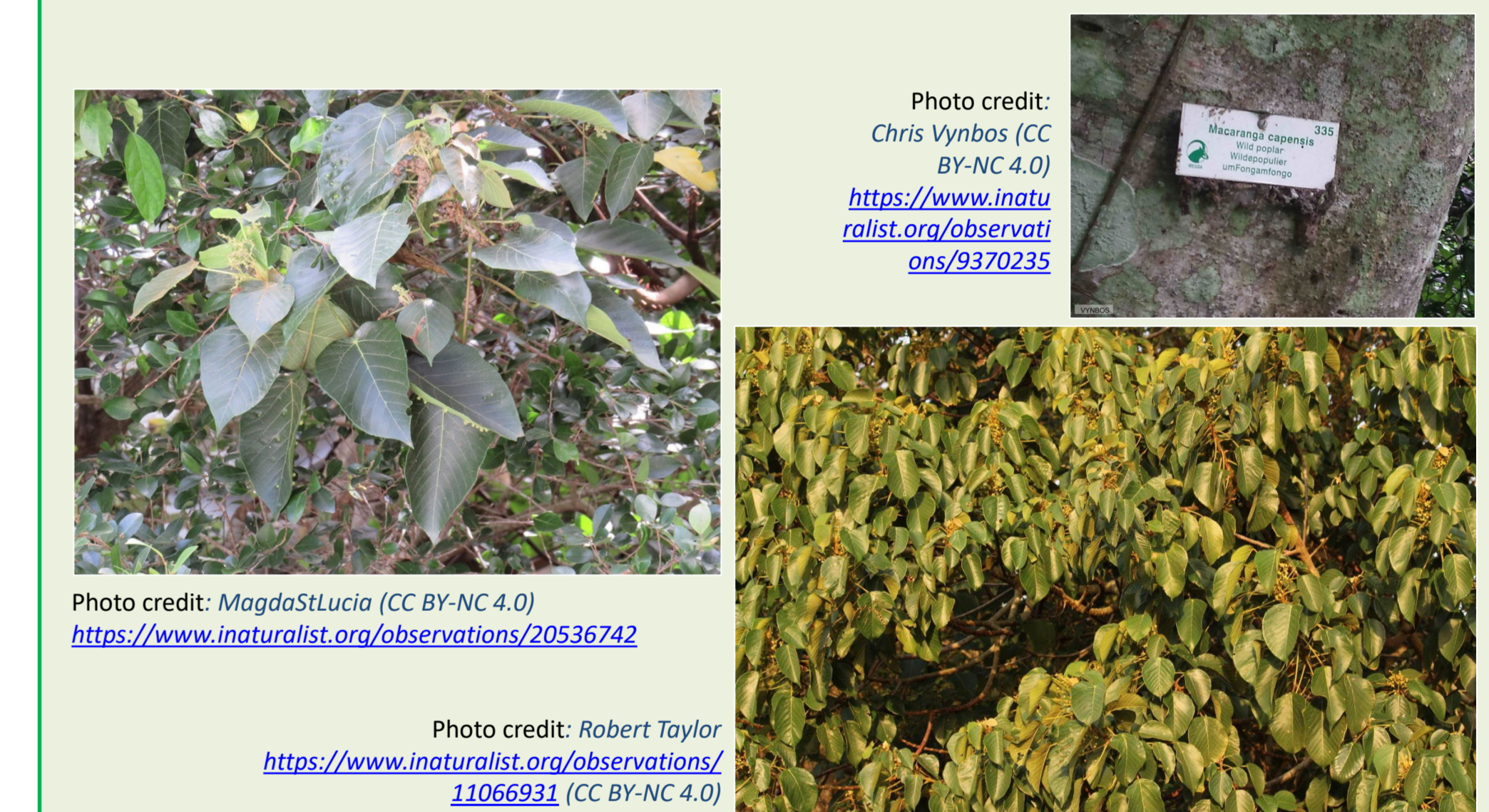


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<https://www.inaturalist.org/observations/9370235>

Photo credit: MagdaStLucia (CC BY-NC 4.0)
<https://www.inaturalist.org/observations/20536742>

Photo credit: Robert Taylor
<https://www.inaturalist.org/observations/11066931> (CC BY-NC 4.0)

Phoenix reclinata (Wild date palm)

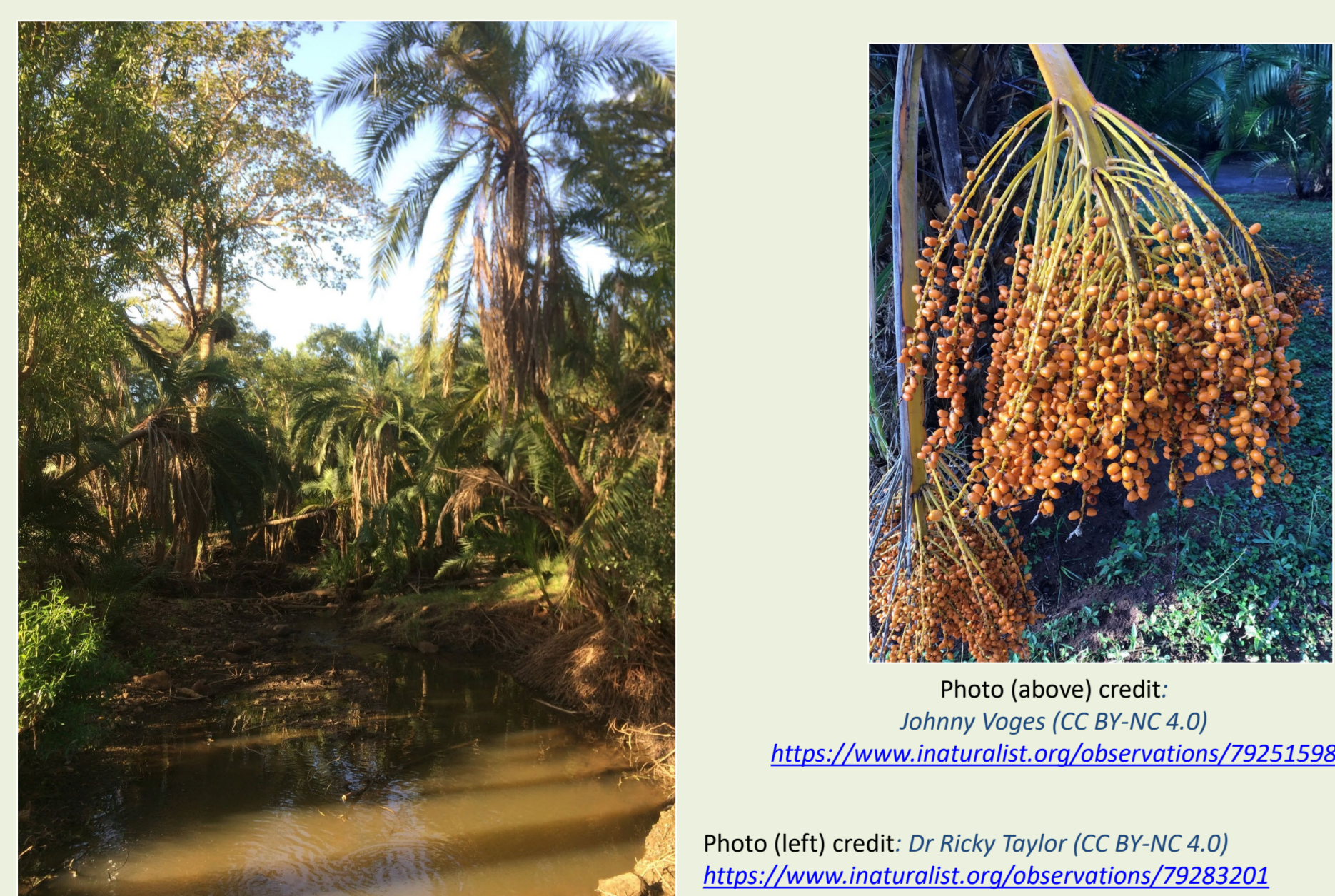


Photo (above) credit: Johnny Voges (CC BY-NC 4.0)
<https://www.inaturalist.org/observations/79251598>

Photo (left) credit: Dr Ricky Taylor (CC BY-NC 4.0)
<https://www.inaturalist.org/observations/79283201>

Raphia australis (Kosi palm)



Isikweletu sezithombe: <http://pza.sanbi.org/raphia-australis>

Photo credit: Dr Ricky Taylor (CC BY-NC 4.0)
https://www.inaturalist.org/guide_taxa/935636

Syzygium cordatum (Water berry)

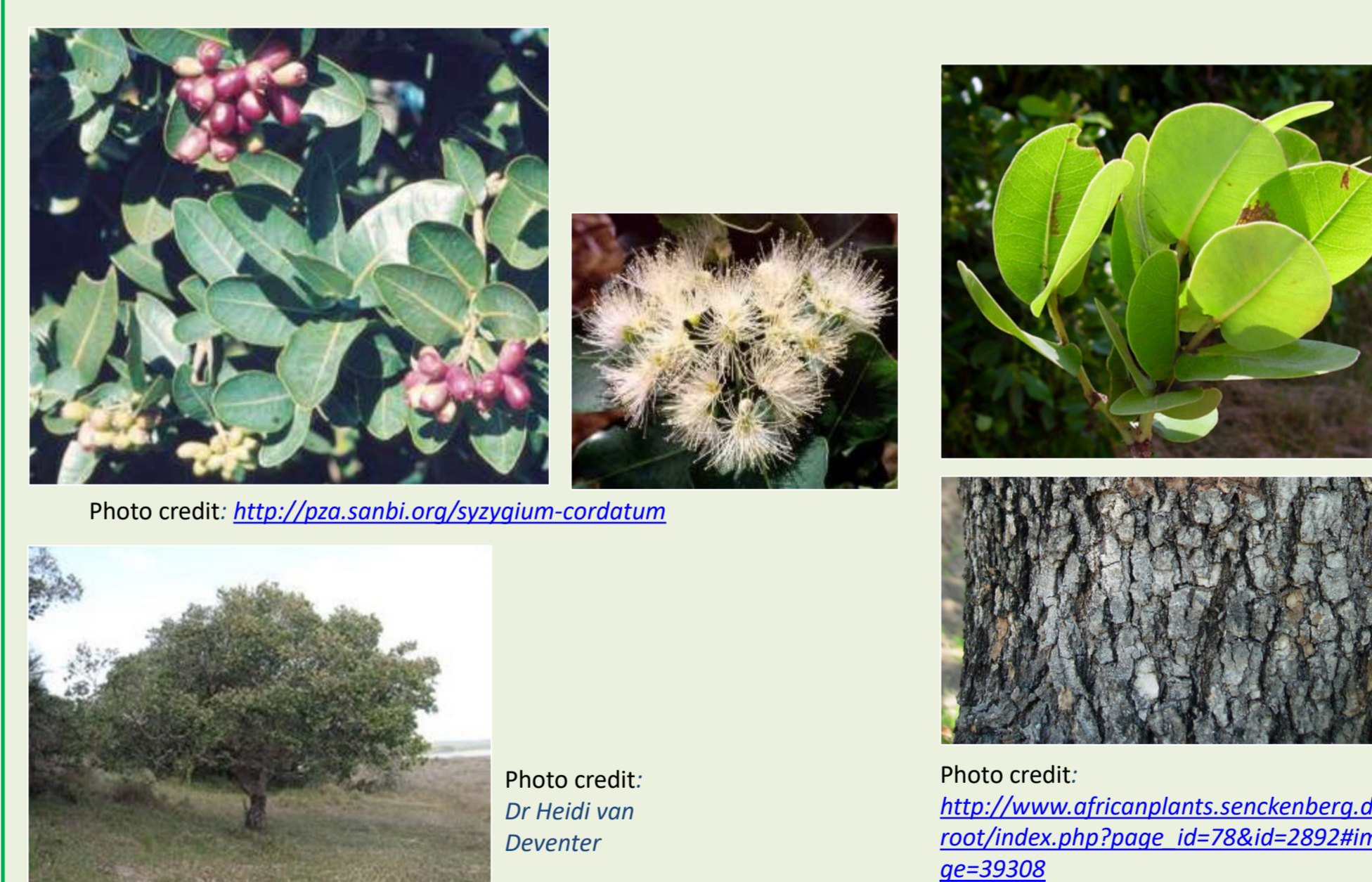


Photo credit: <http://pza.sanbi.org/syzygium-cordatum>

Photo credit: Dr Heidi van Deventer

Photo credit: http://www.africanplants-senckenberg.de/root/index.php?page_id=78&id=2892#wimage=39308

Voacanga thouarsii
(Wild frangipani)

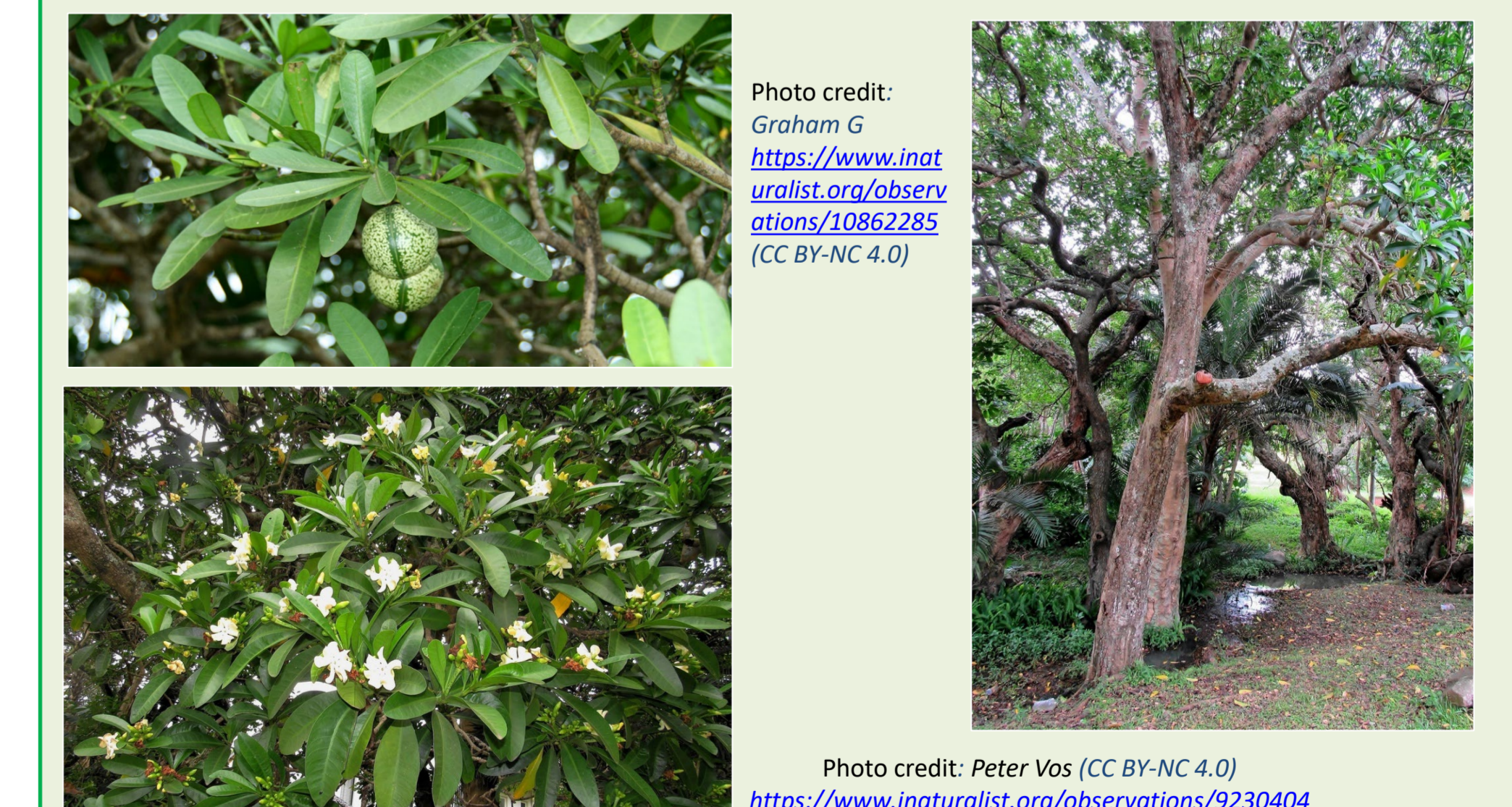


Photo credit: Graham G
<https://www.inaturalist.org/observations/10862285> (CC BY-NC 4.0)

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<https://www.inaturalist.org/observations/9230404>

Van Deventer, H.; Adams, J.; Durand, J.F.; Grobler, R.; Grundling, P.-L.; Janse van Rensburg, S.; Jewitt, D.; Kelbe, B.; Mackay, C.F.; Naidoo, L.; Nel, Jeanne L.; Pretorius, L.; Riddin, T.; & Van Niekerk, L. 2021. Conservation conundrum – red listing of subtropical-temperate coastal forested wetlands of South Africa. Ecological Indicators, 130: 108077, DOI: <https://doi.org/10.1016/j.ecolind.2021.108077>.

*The 13th key indicator tree for forested wetlands is *Rauvolfia caffra* (quinine tree), see <http://pza.sanbi.org/rauvolfia-caffra>