

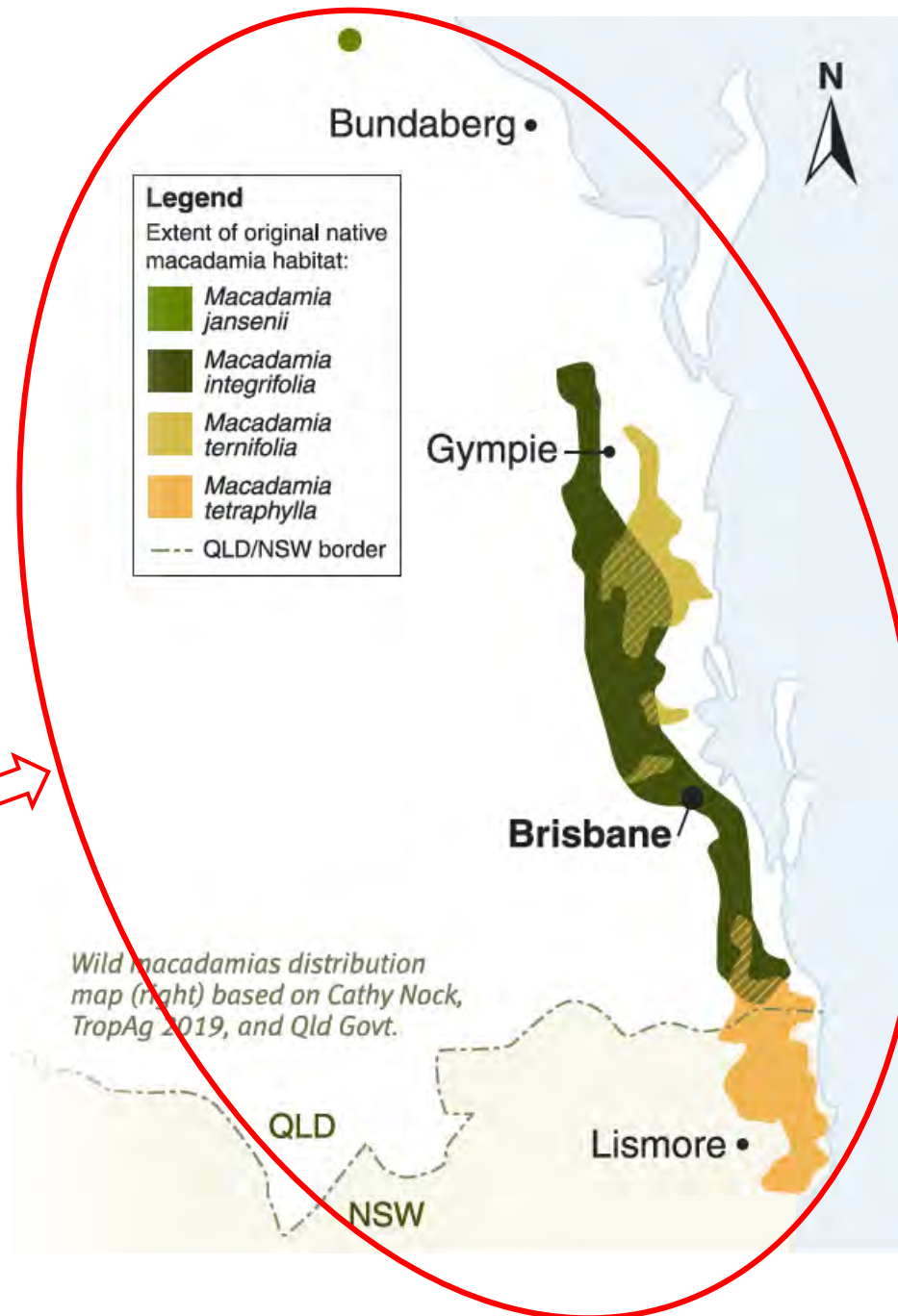
Acknowledgement of Country

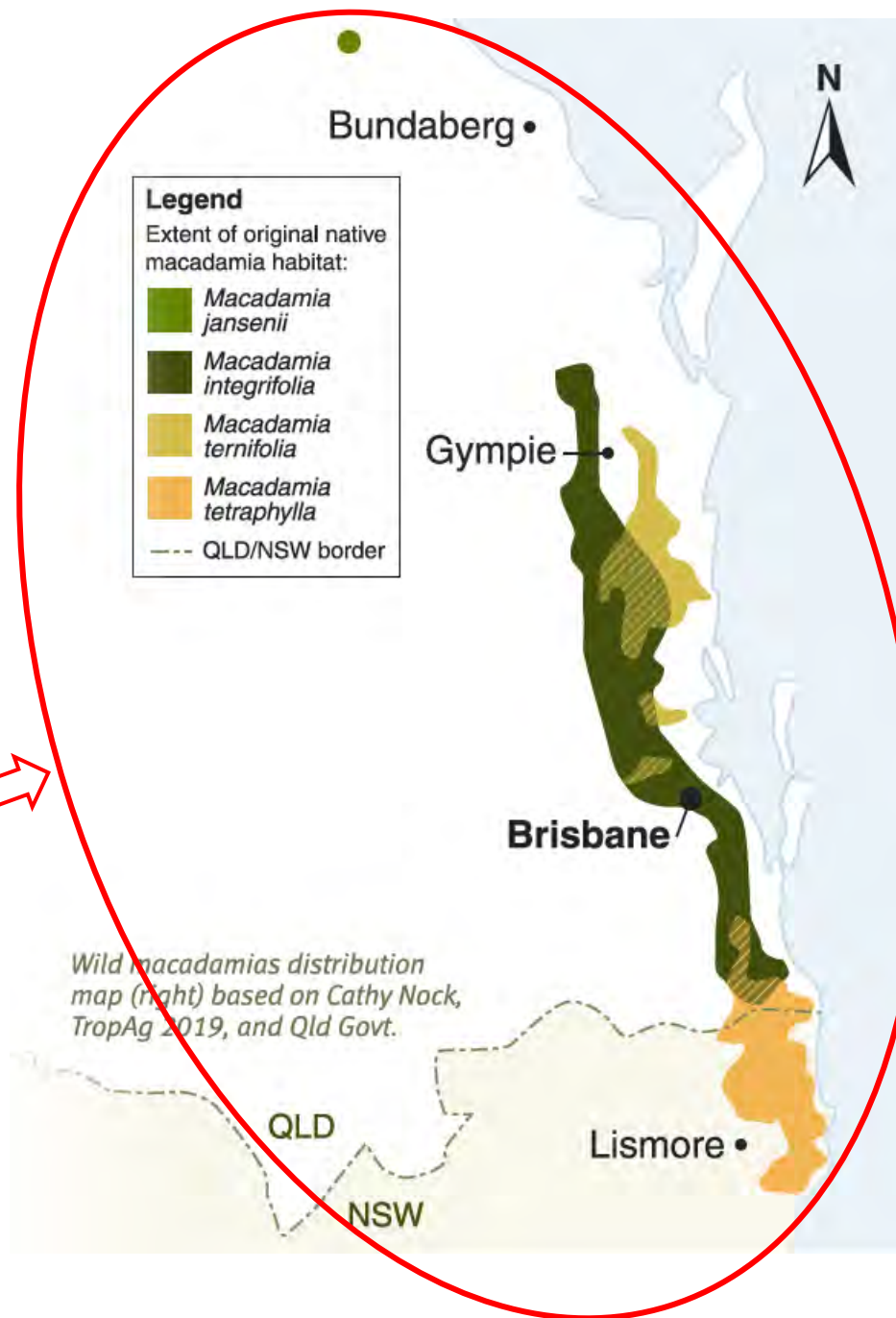
I acknowledge the Traditional Owners of Ballina and all the Bundjalung nations and thank them for the welcome to this conference.

I also acknowledge the Traditional Owners of the lands where macadamias grow, and their long and careful custodianship: the Gurang, Gooreng Gooreng, Kabi Kabi, Jinibara, Turrbal, Danggan Balun and Bundjalung peoples.



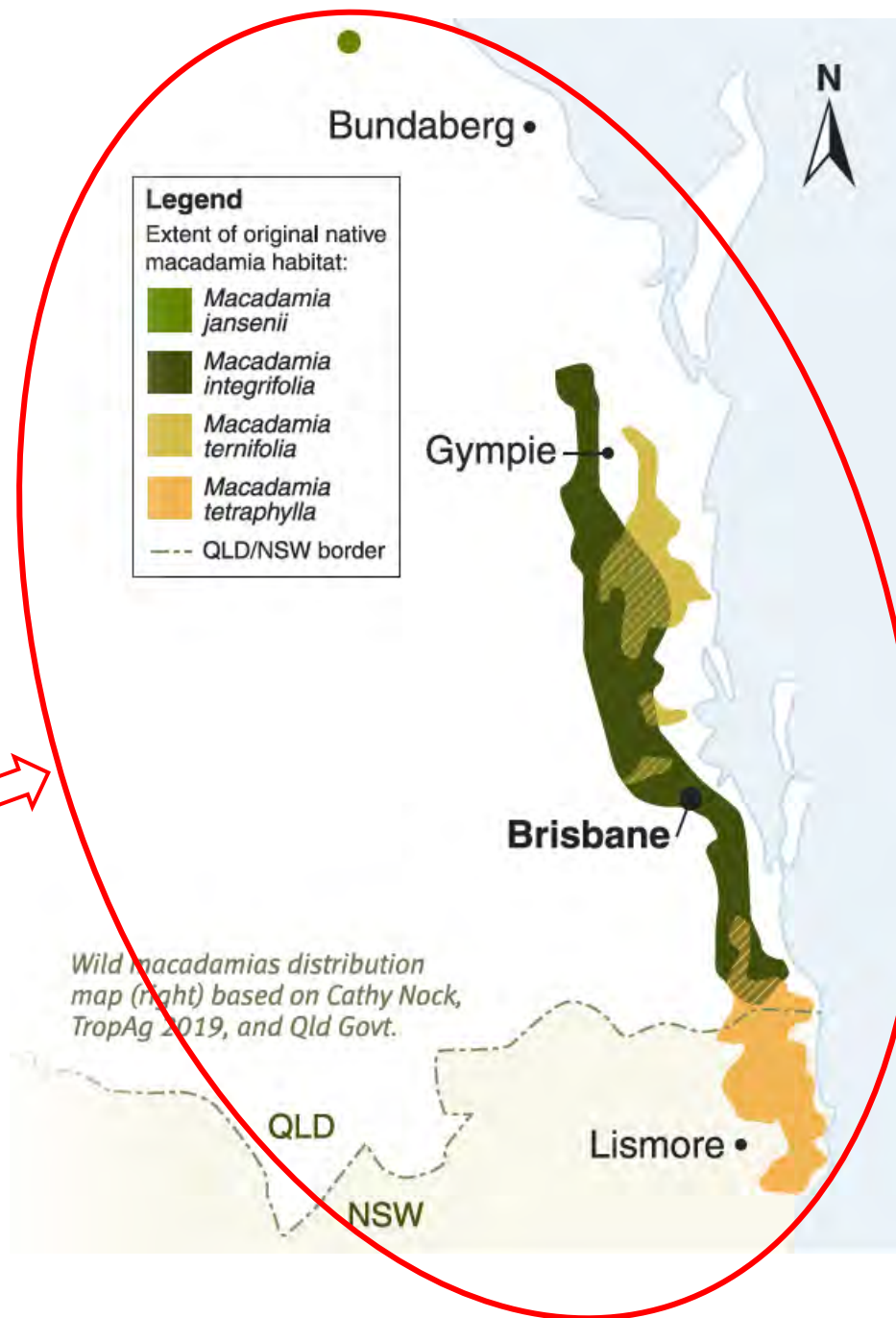
Macadamia jansonii – Critically Endangered





Macadamia jansenii – Critically Endangered

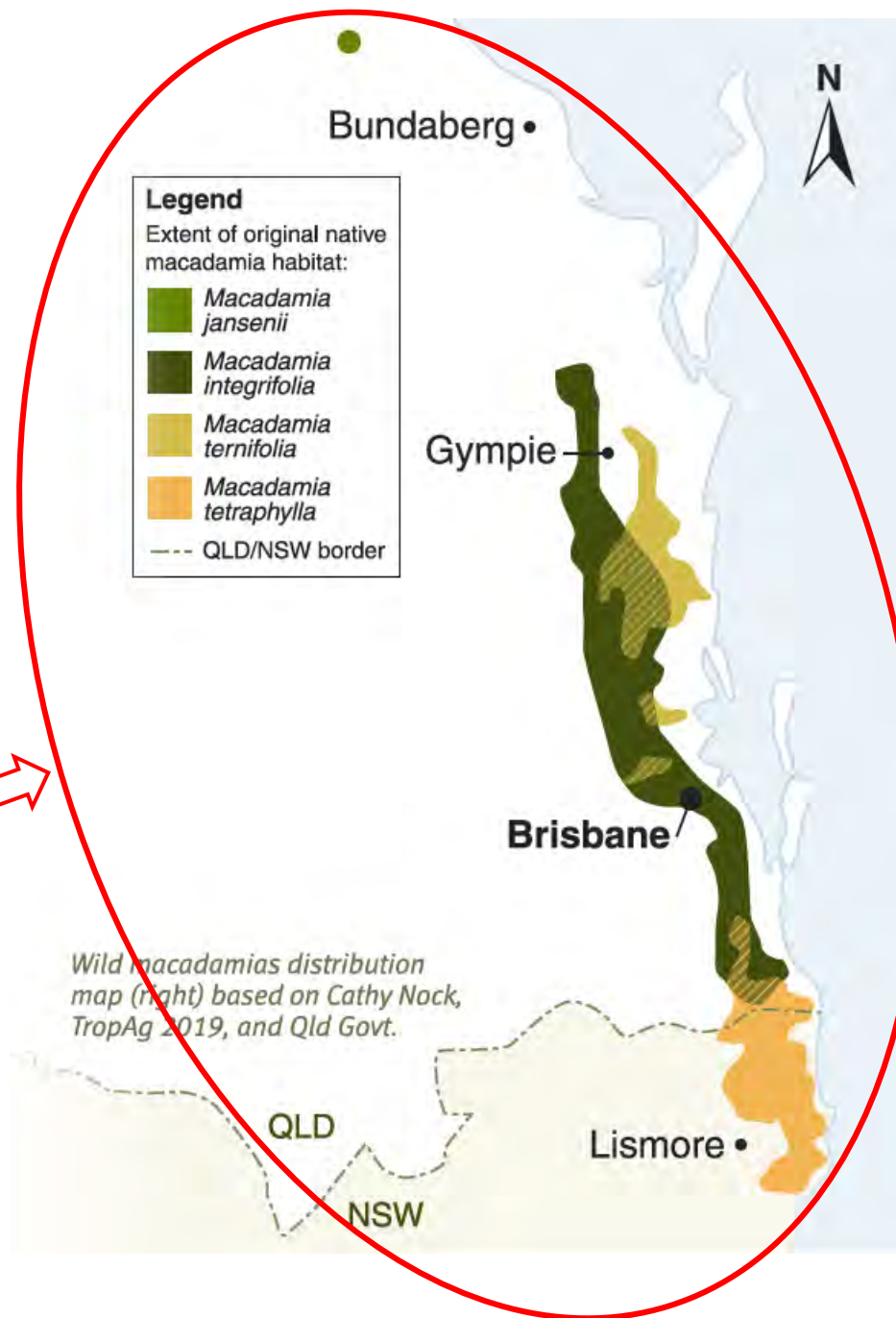
M. integrifolia – Vulnerable



Macadamia jansonii – Critically Endangered

M. integrifolia – Vulnerable

M. ternifolia – Vulnerable, IUCN Endangered



Macadamia jansonii – Critically Endangered

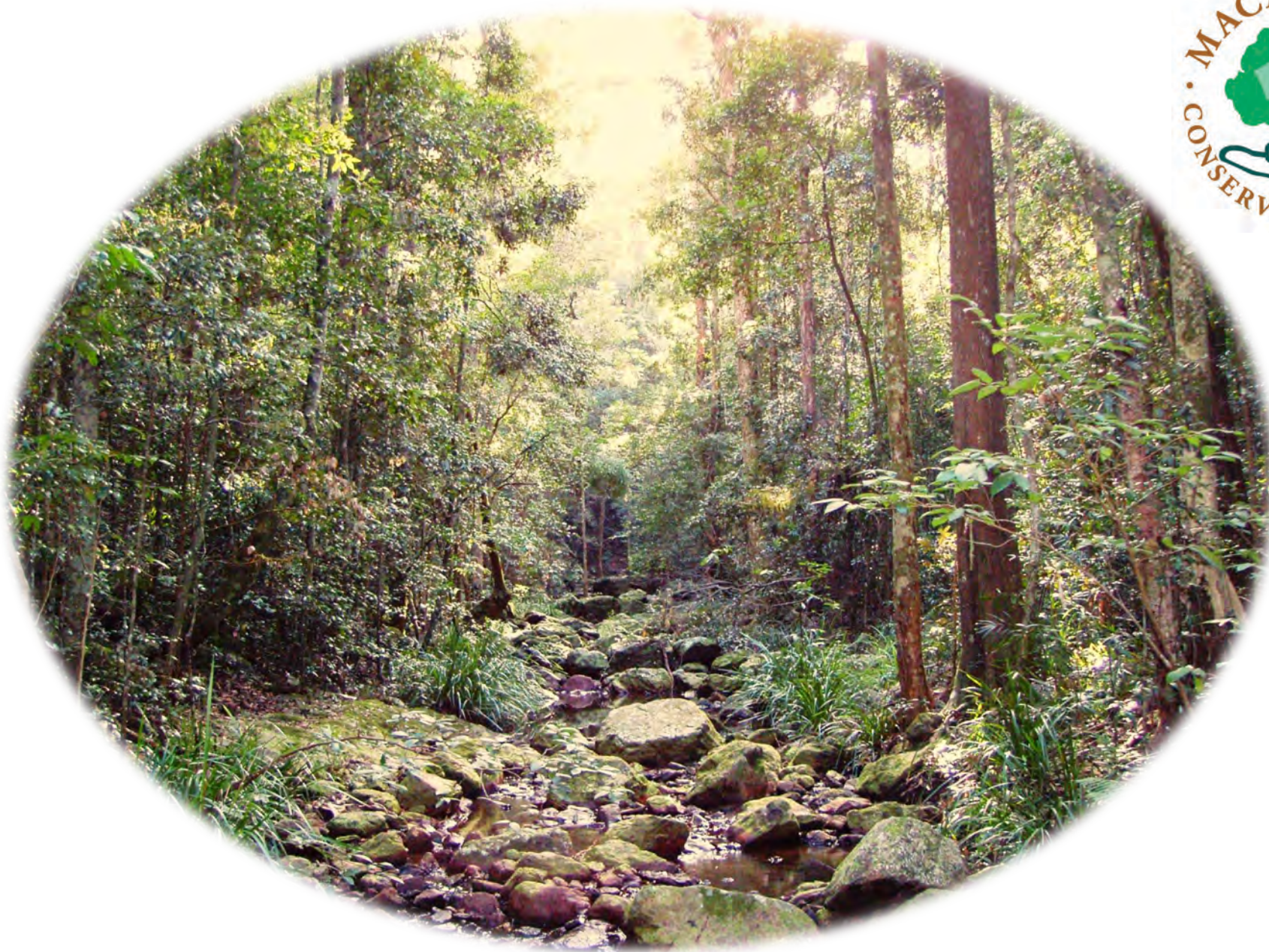
M. integrifolia – Vulnerable

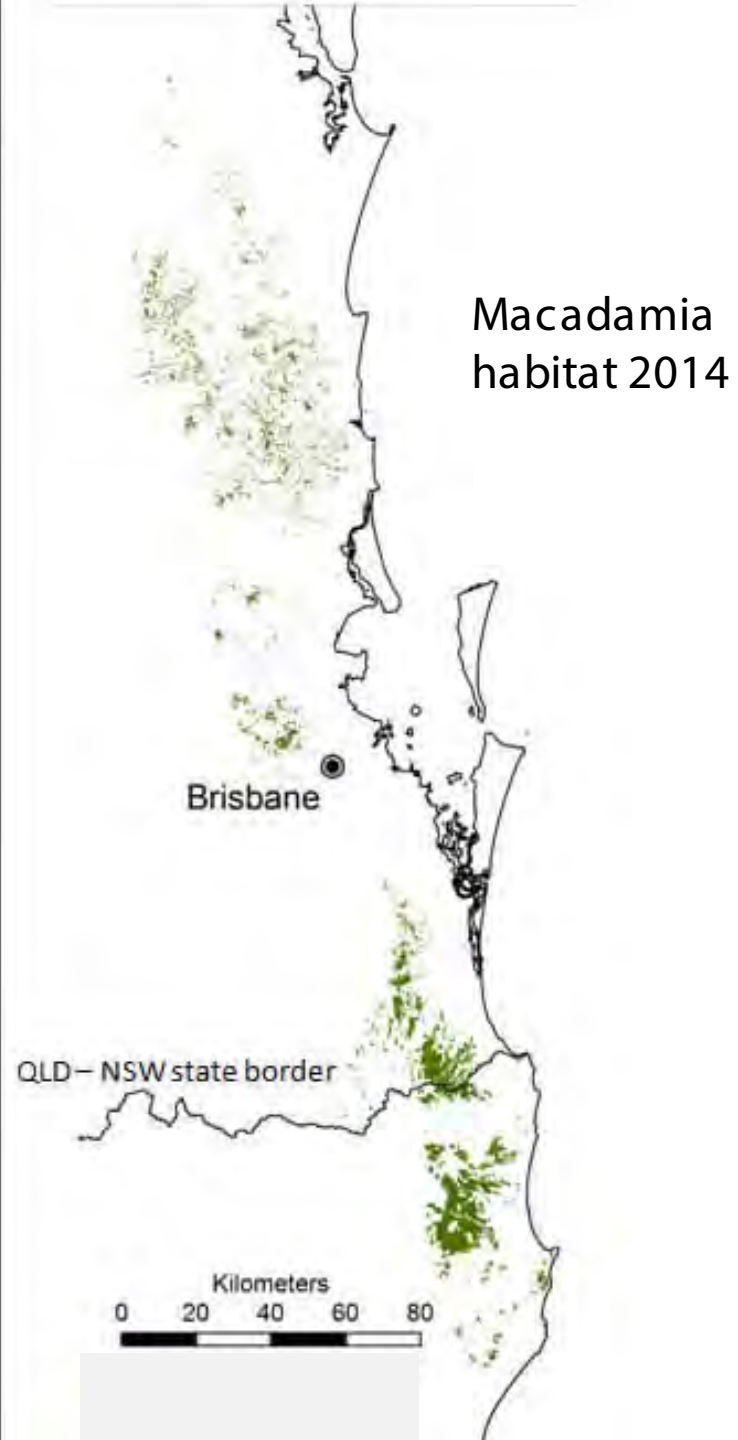
M. ternifolia – Vulnerable, IUCN Endangered

M. tetraphylla – Vulnerable, IUCN Endangered



Macadamia
habitat
pre-clearing







Macadamia
habitat
pre-clearing

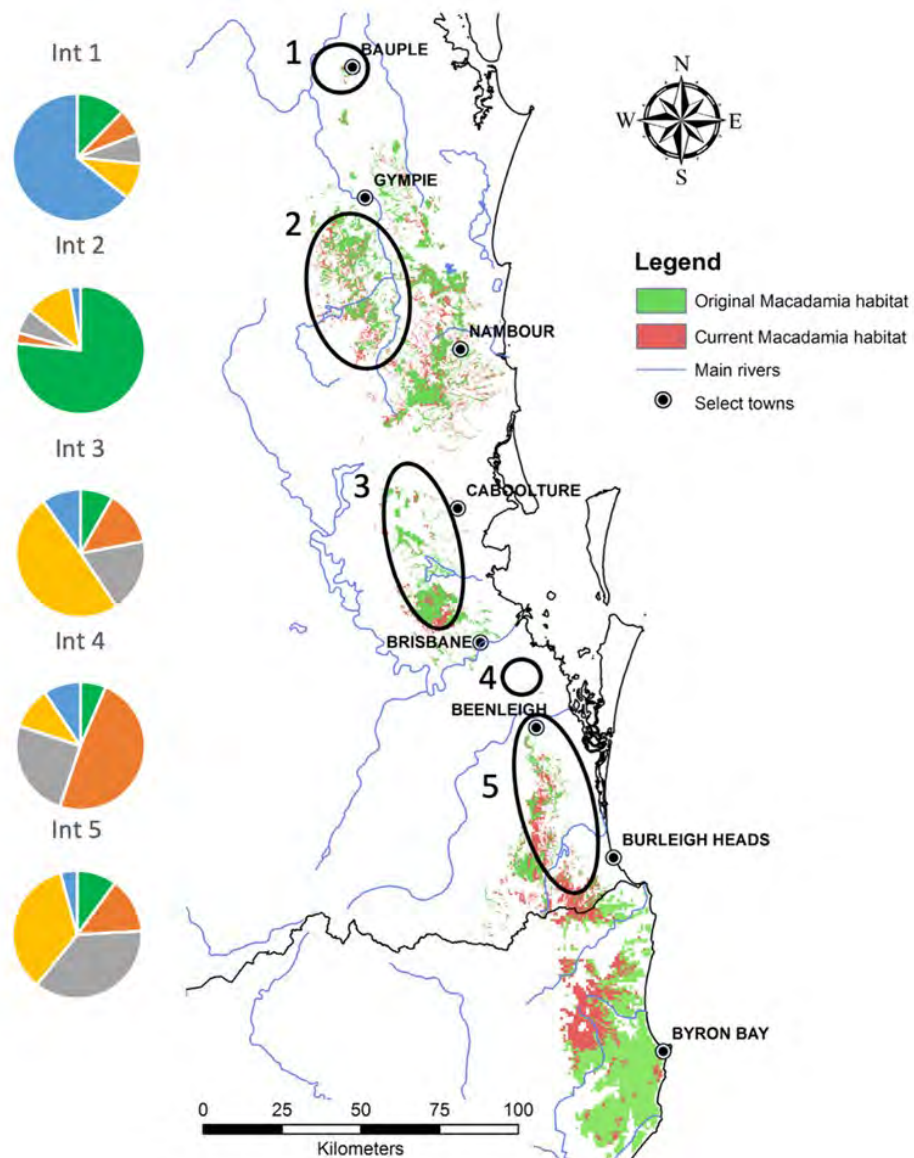


Macadamia
habitat 2014

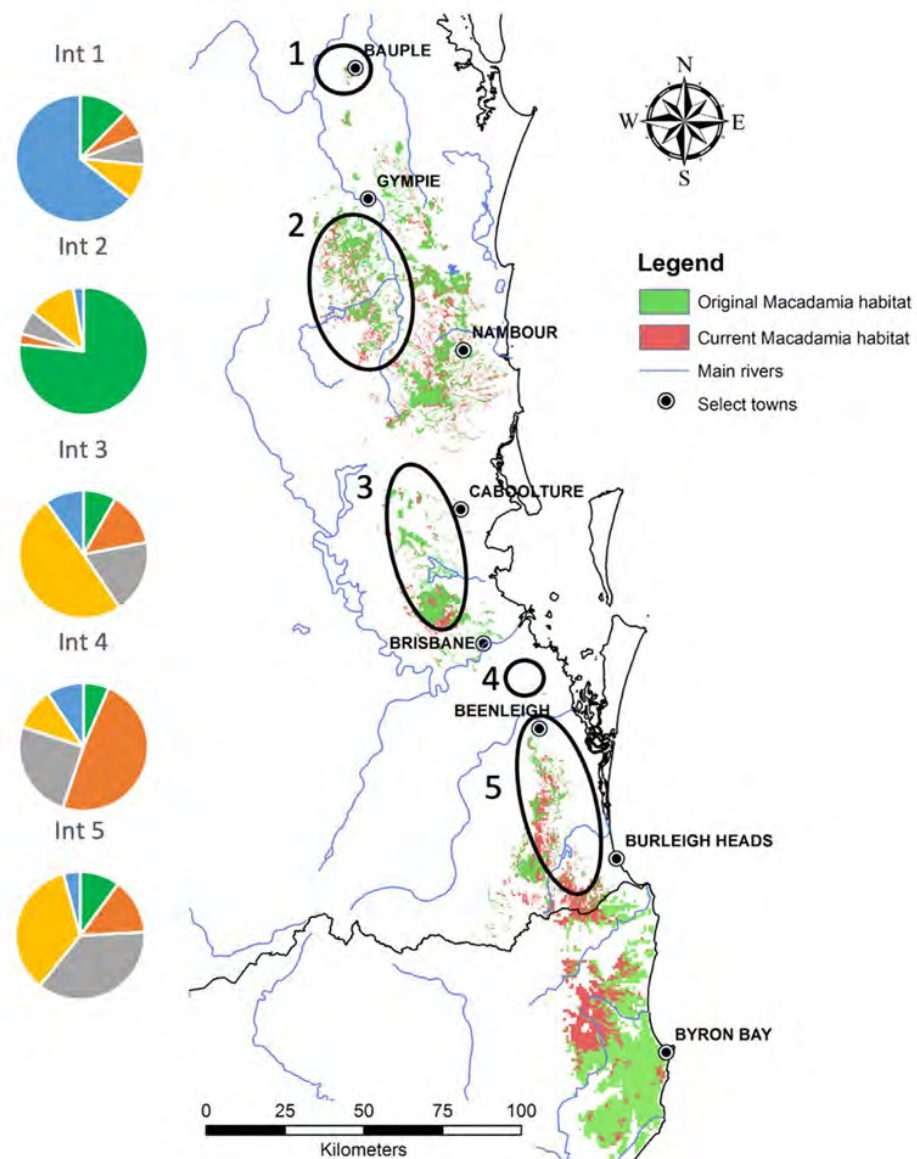
Over 80% habitat cleared in less than 200 years

Over 90% for *M. tetraphylla*

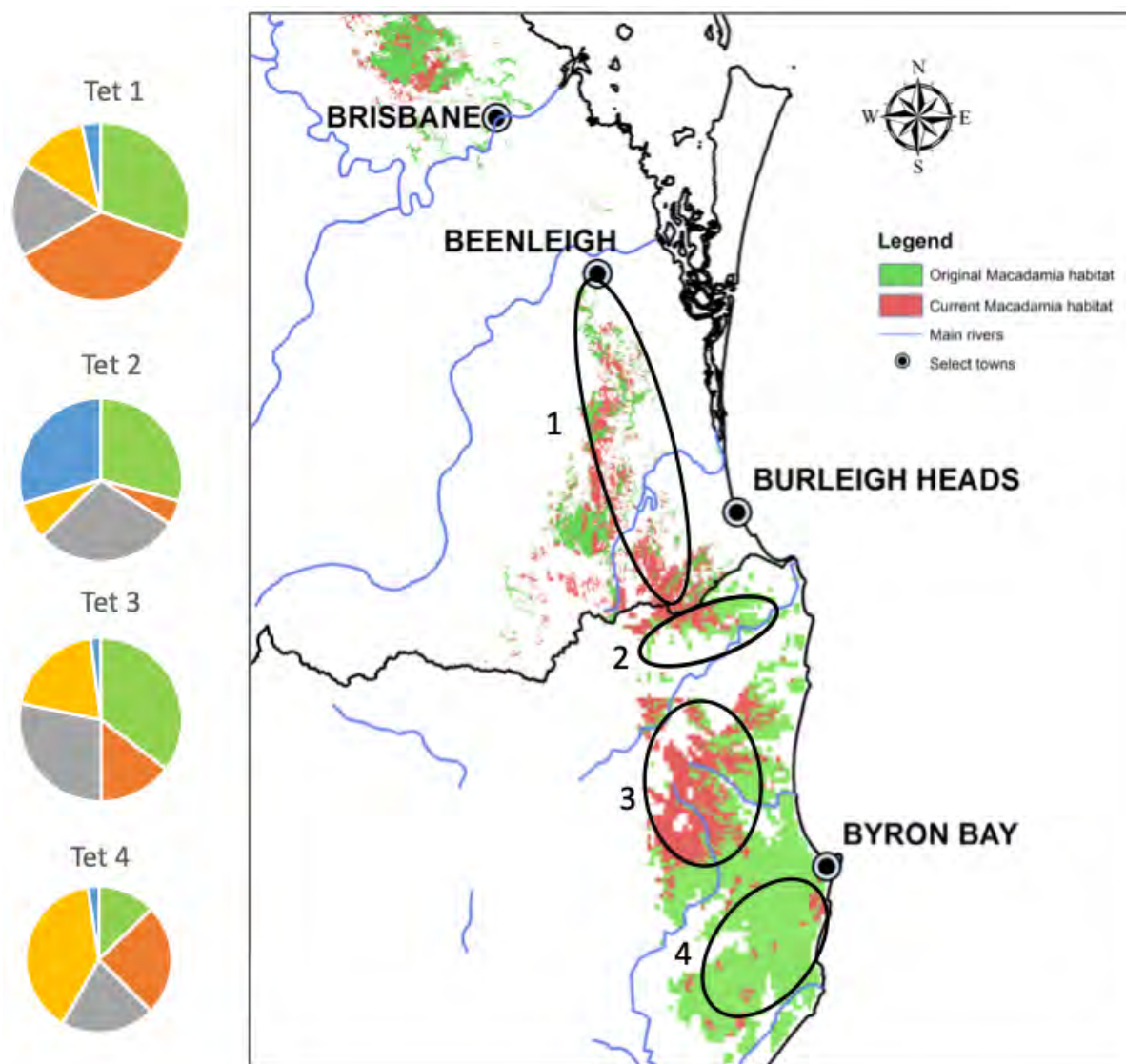
M. integrifolia genetic clusters:



M. integrifolia genetic clusters:



M. tetraphylla genetic clusters:



Impact of orchards on crop wild relatives

- 5 -20% habitat remaining, but still genetically diverse population



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Impact of orchards on crop wild relatives

- 5 -20% habitat remaining, but still genetically diverse population
- Pollination distance estimated for *M. integrifolia* - 2800m (Jodi Neal, 2007)
- One in five seedlings under wild *M. tetraphylla* within pollination distance of orchards were not pure *M. tetraphylla* (Katie O'Connor, 2015)



How can we retain remaining genetic diversity?

- Know where the trees are
- Grow a selection of the remaining diversity
- Propagate from cuttings to conserve full suite of DNA.
- Keep planting these trees into the landscape to help the full genetic diversity persist across macadamia habitat.



Challenges

- Queensland's Nature Conservation Act
 - No provision to collect propagation material from Protected Areas, even for managed translocation programs.
- Much of the genetic diversity is in Queensland PAs.
- Growing macadamias from cuttings is possible but tricky
 - takes time, skill, raised and heated growing beds.
- Complex supply chain to source appropriate genetic material, grow and keep track of genotypes and supply to planting sites.
- If not, habitat may persist, but without wild macadamias.

