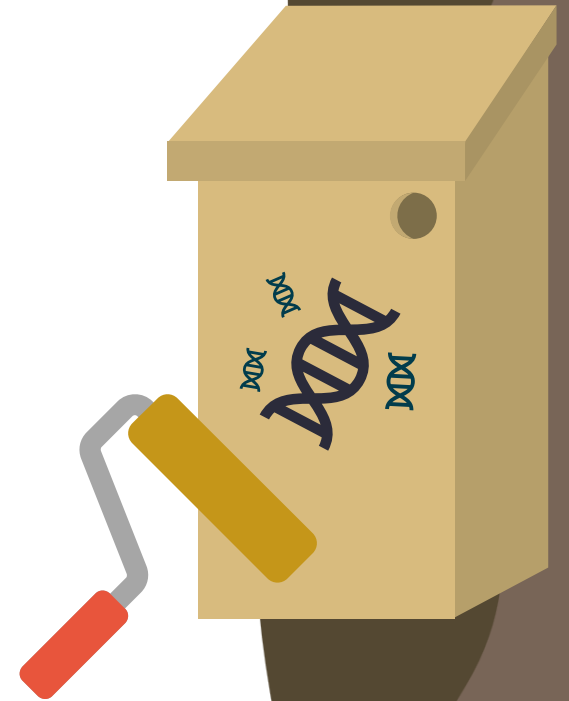


On a roll: a direct comparison of extraction methods for the recovery of eDNA from roller swabbing of surfaces



Austin Guthrie

Paul Nevill, Christine Cooper, Bill Bateman, Mieke van der Heyde



Curtin University

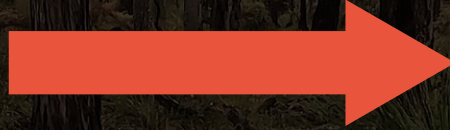




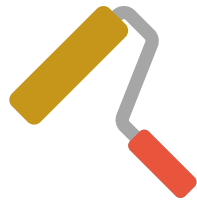
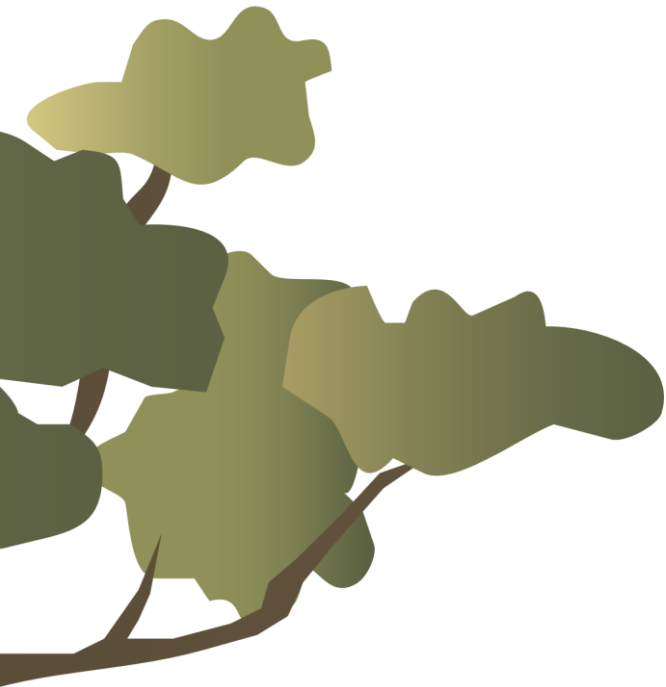
Northern Jarrah Forest







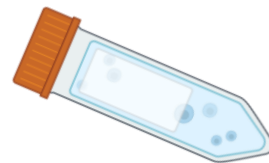
Methods Comparison



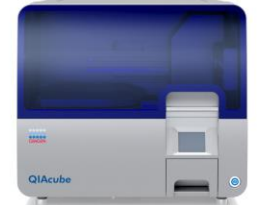
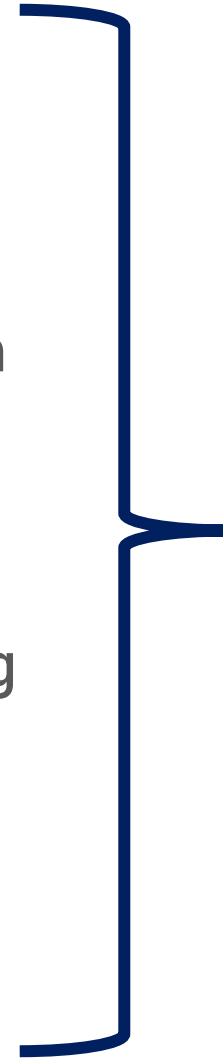
Water filtration



Roller trimming



Lysis buffer

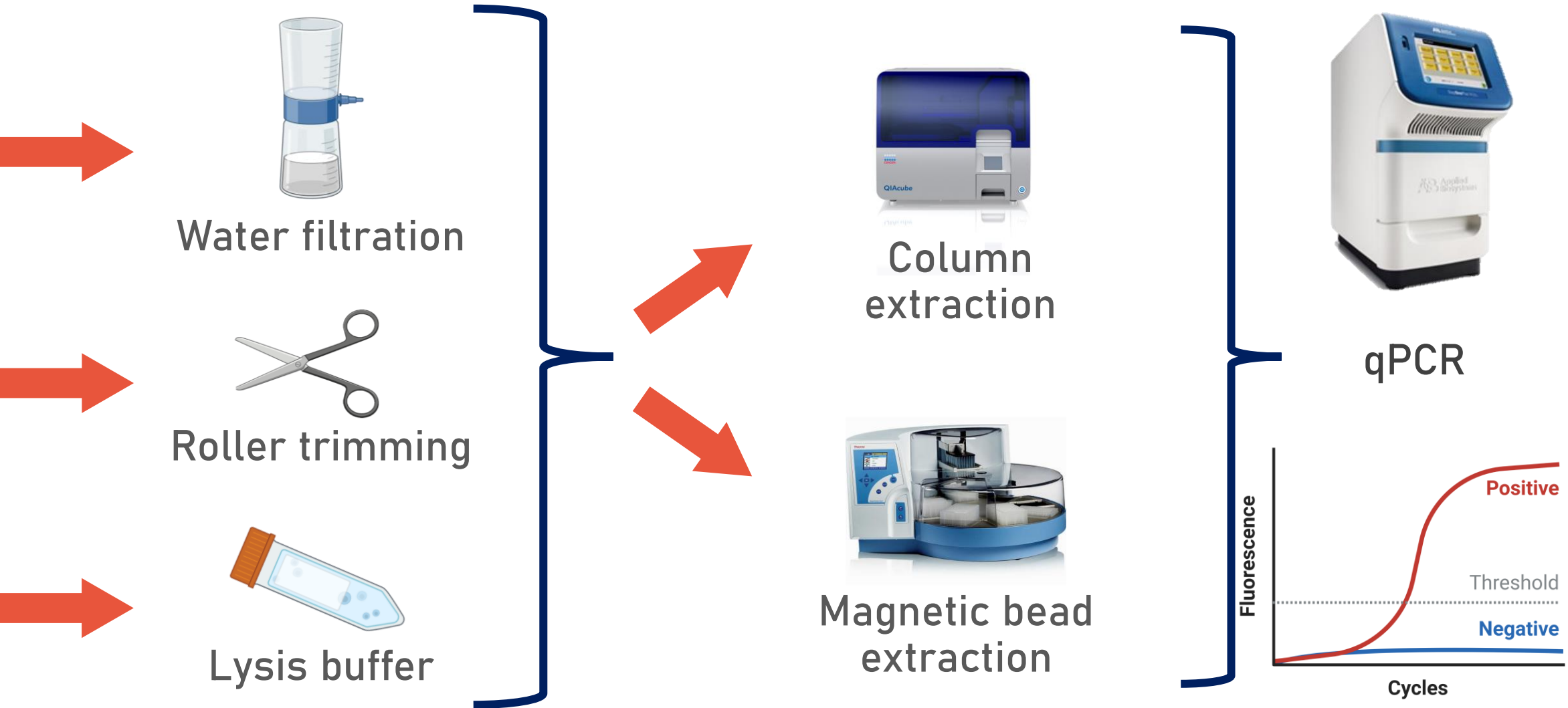


Column extraction

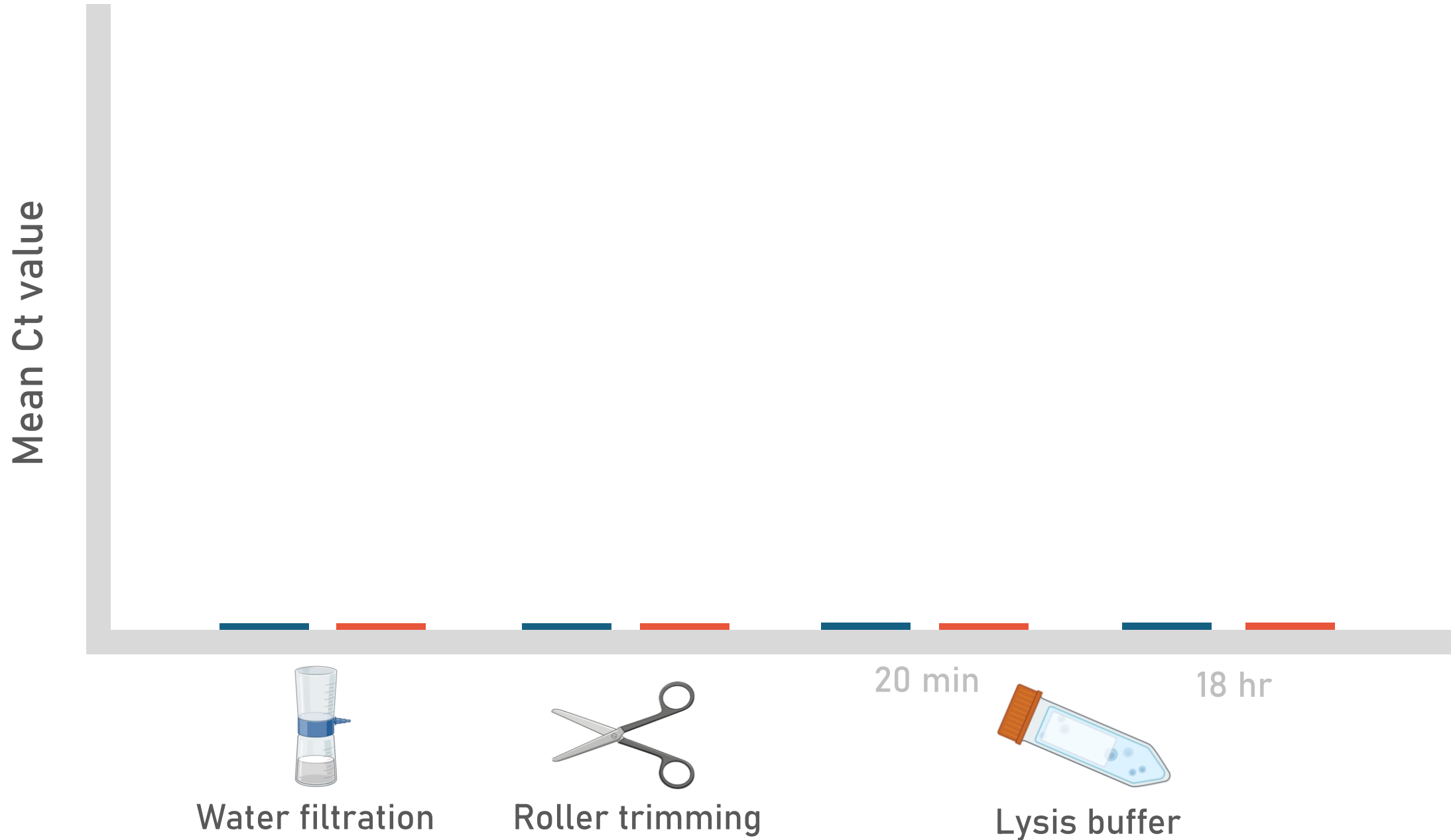


Magnetic bead extraction

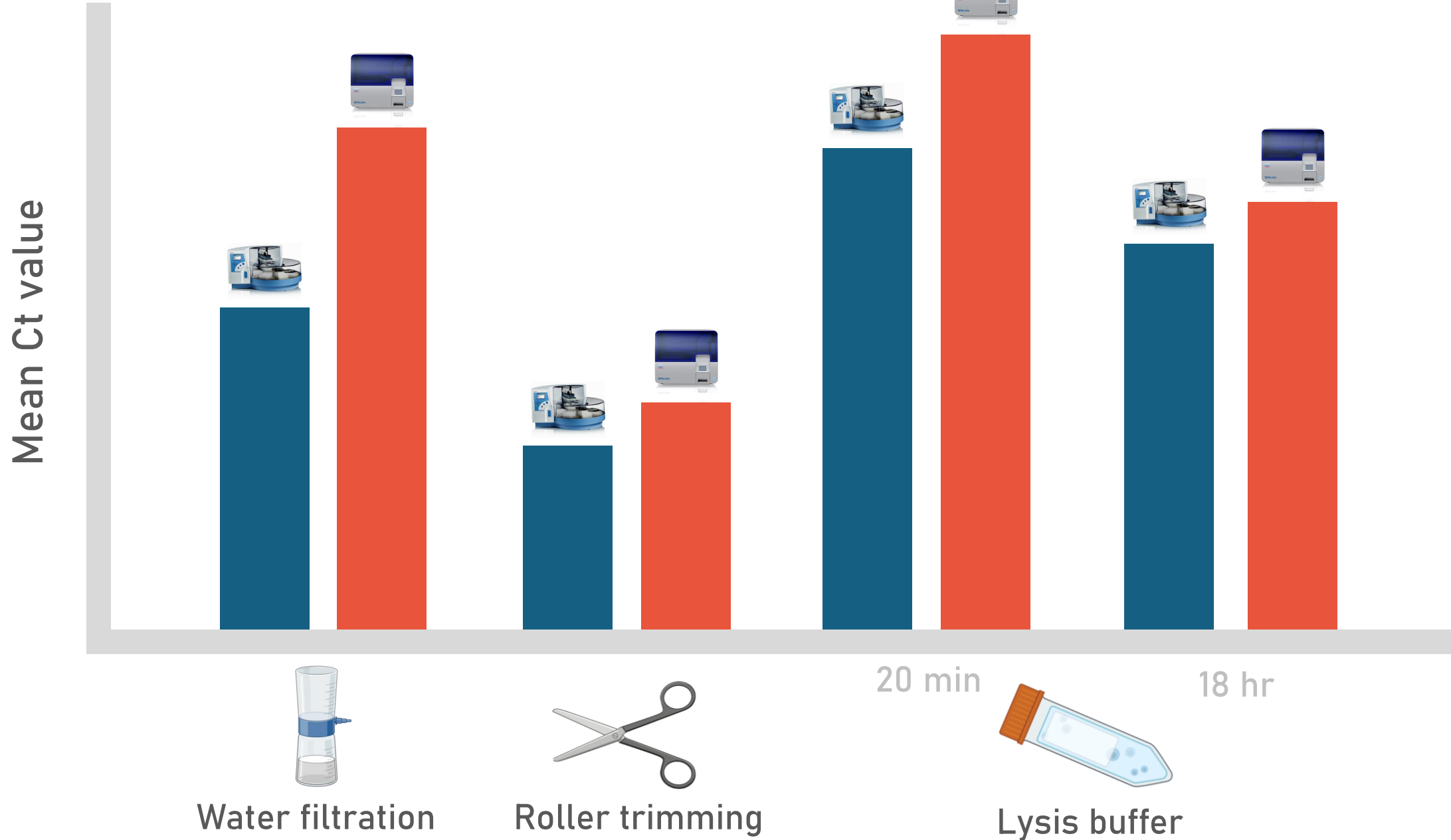
Methods Comparison



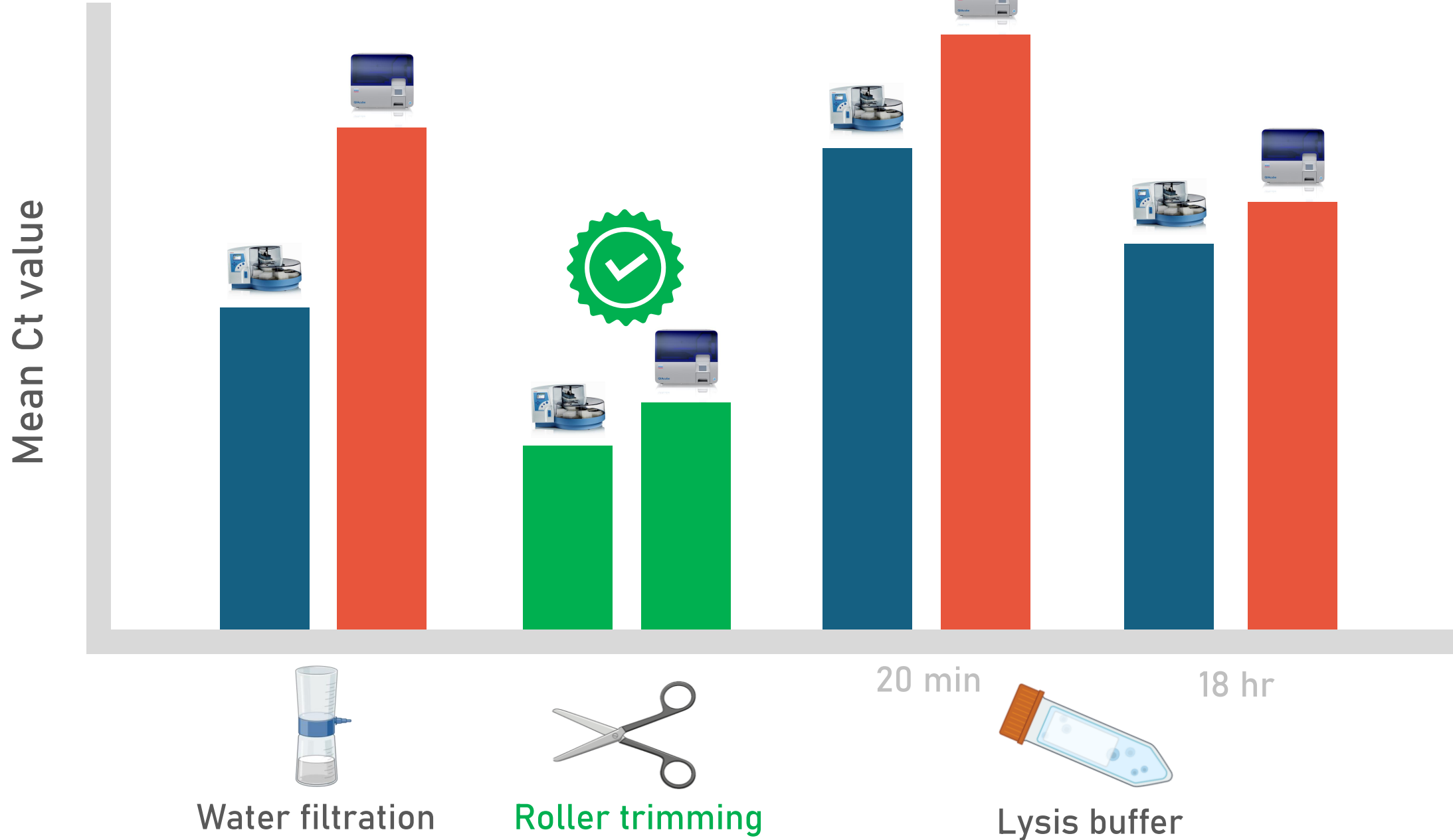
CT values



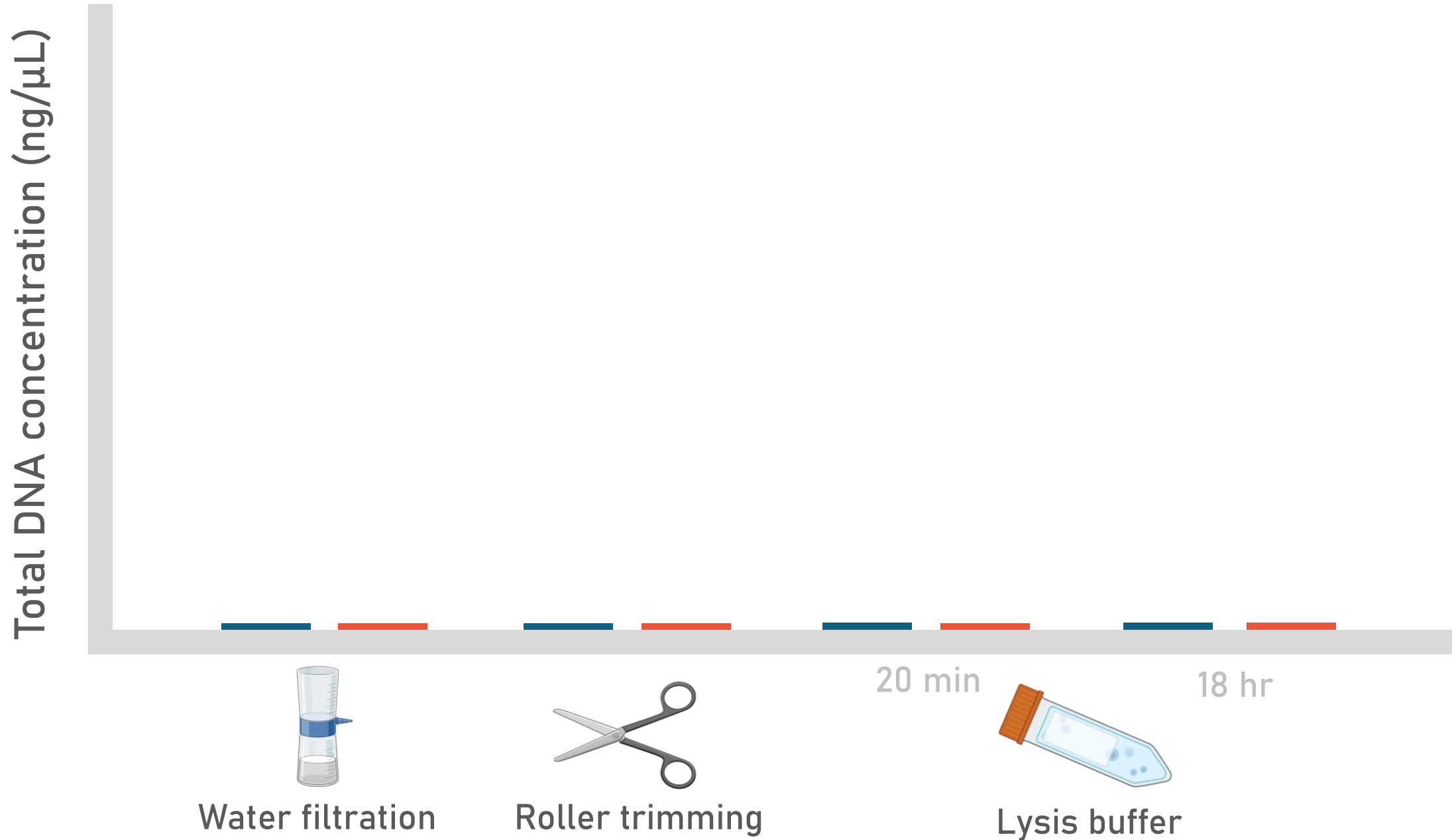
CT values



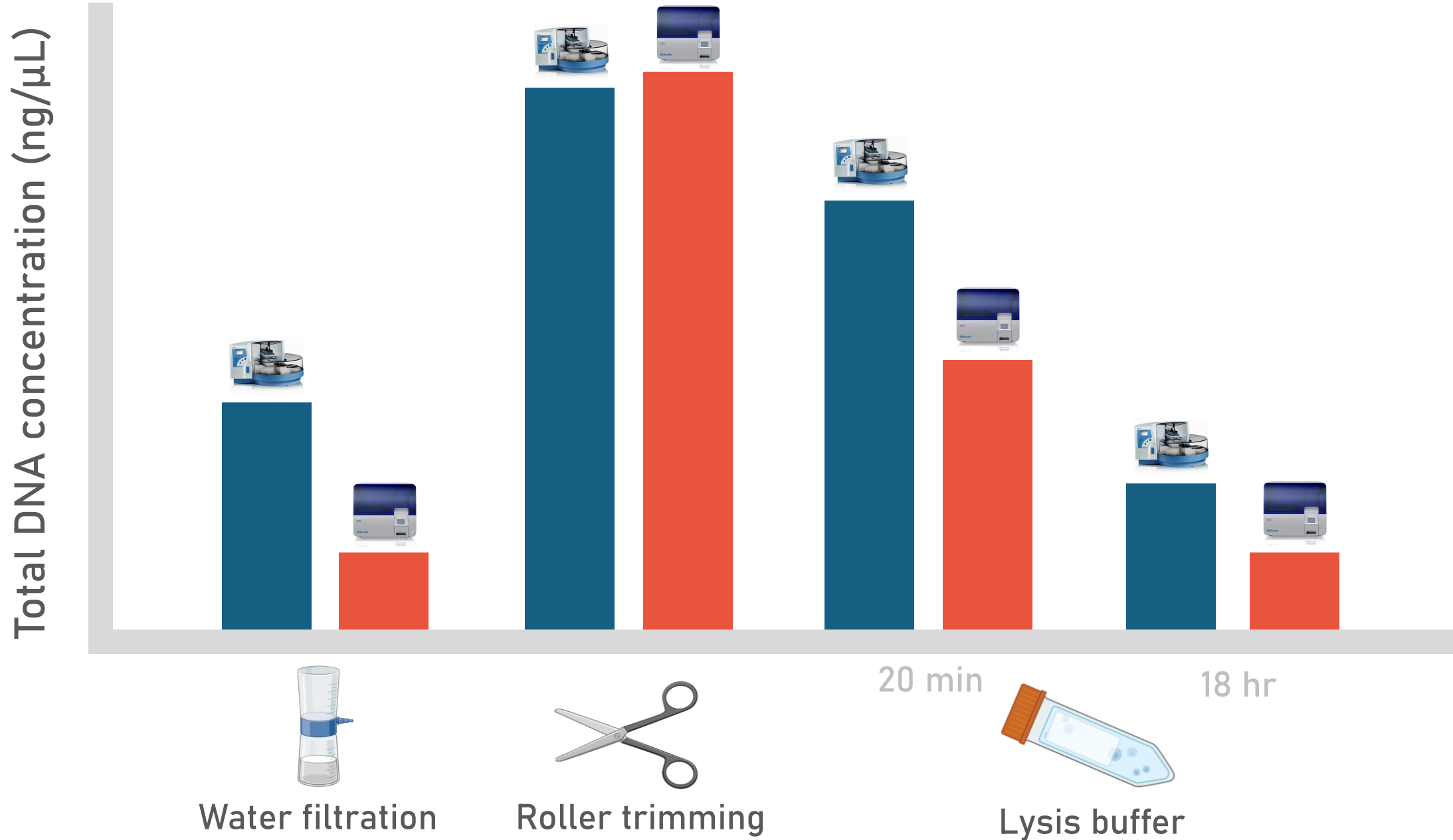
CT values



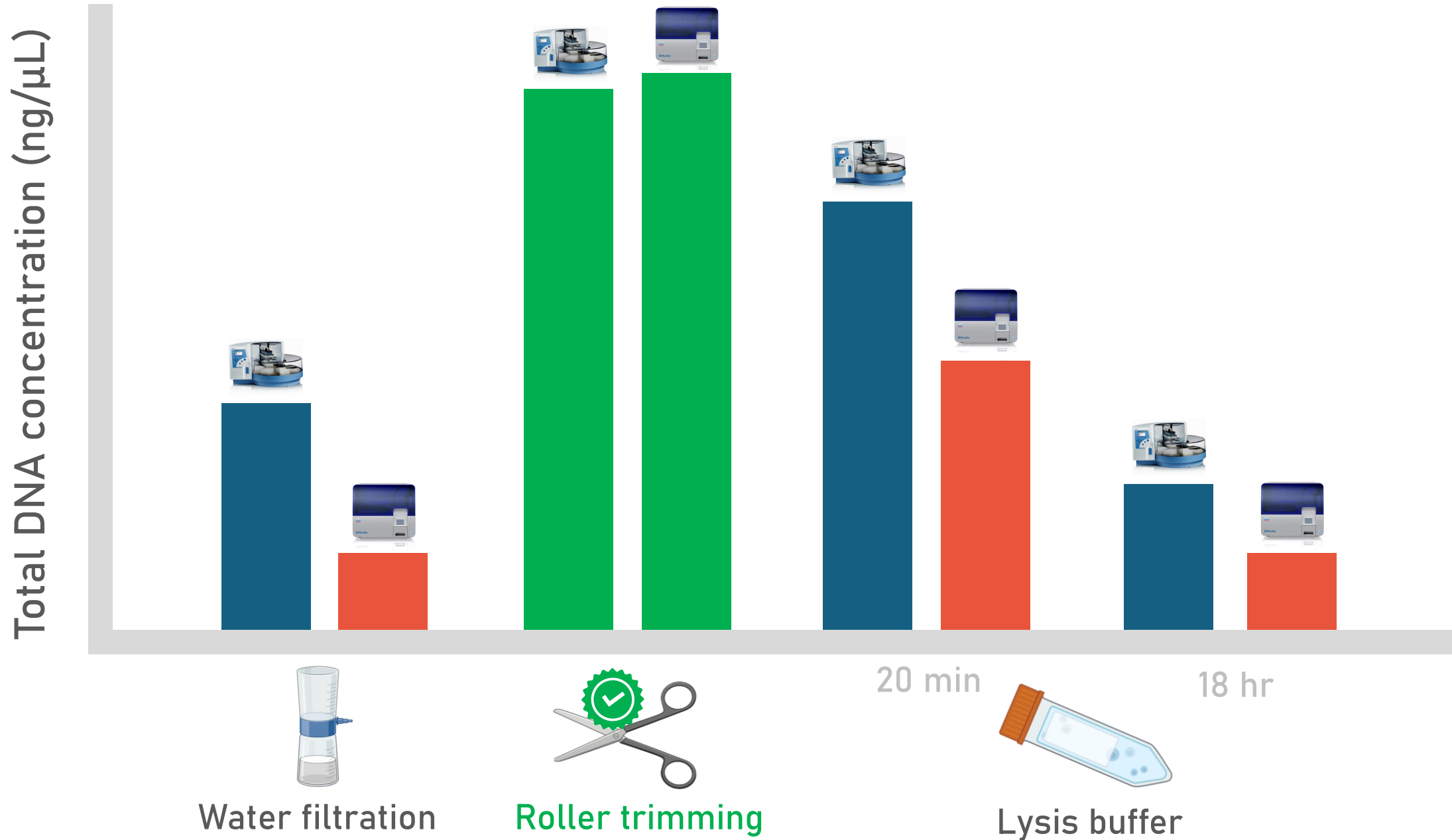
Qubit DNA concentration

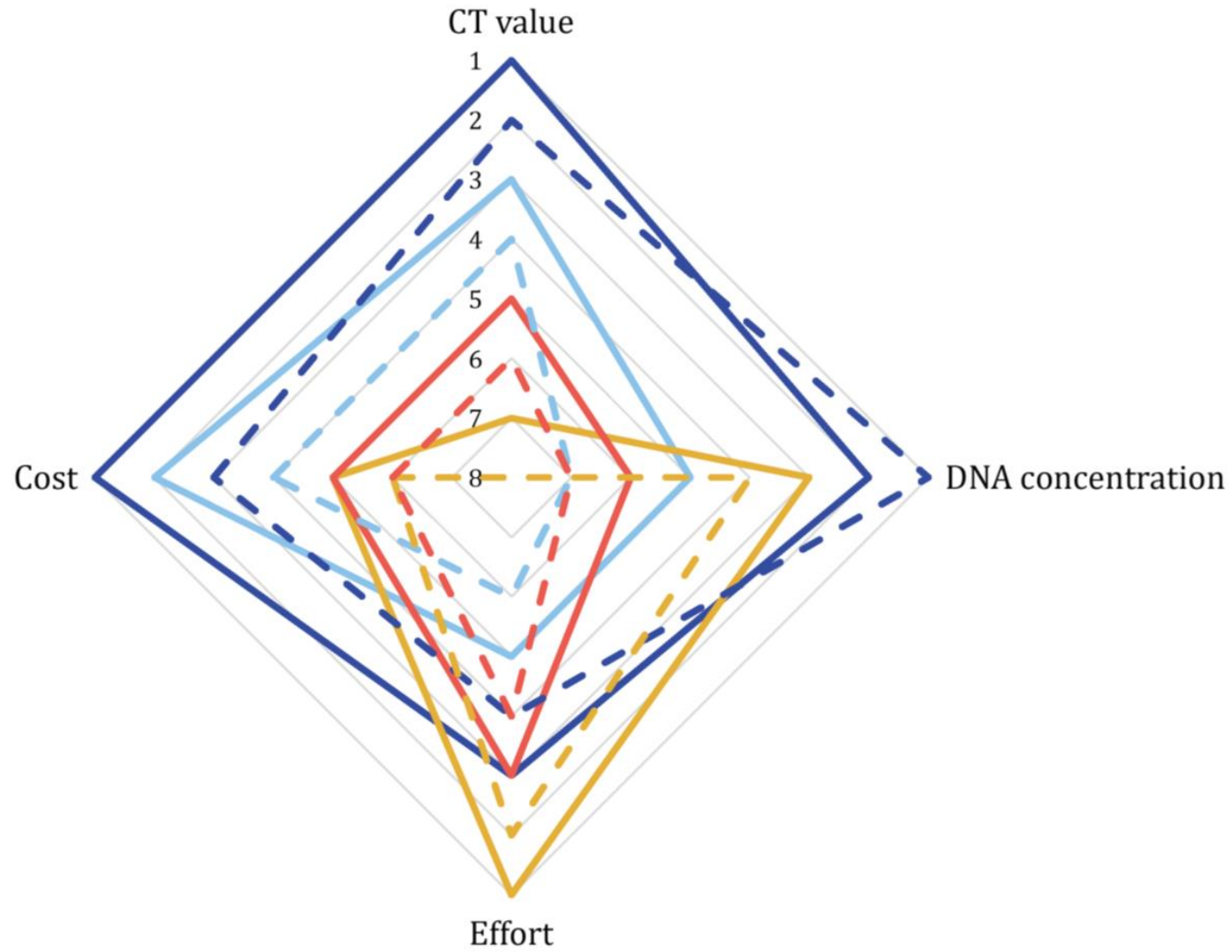


Qubit DNA concentration

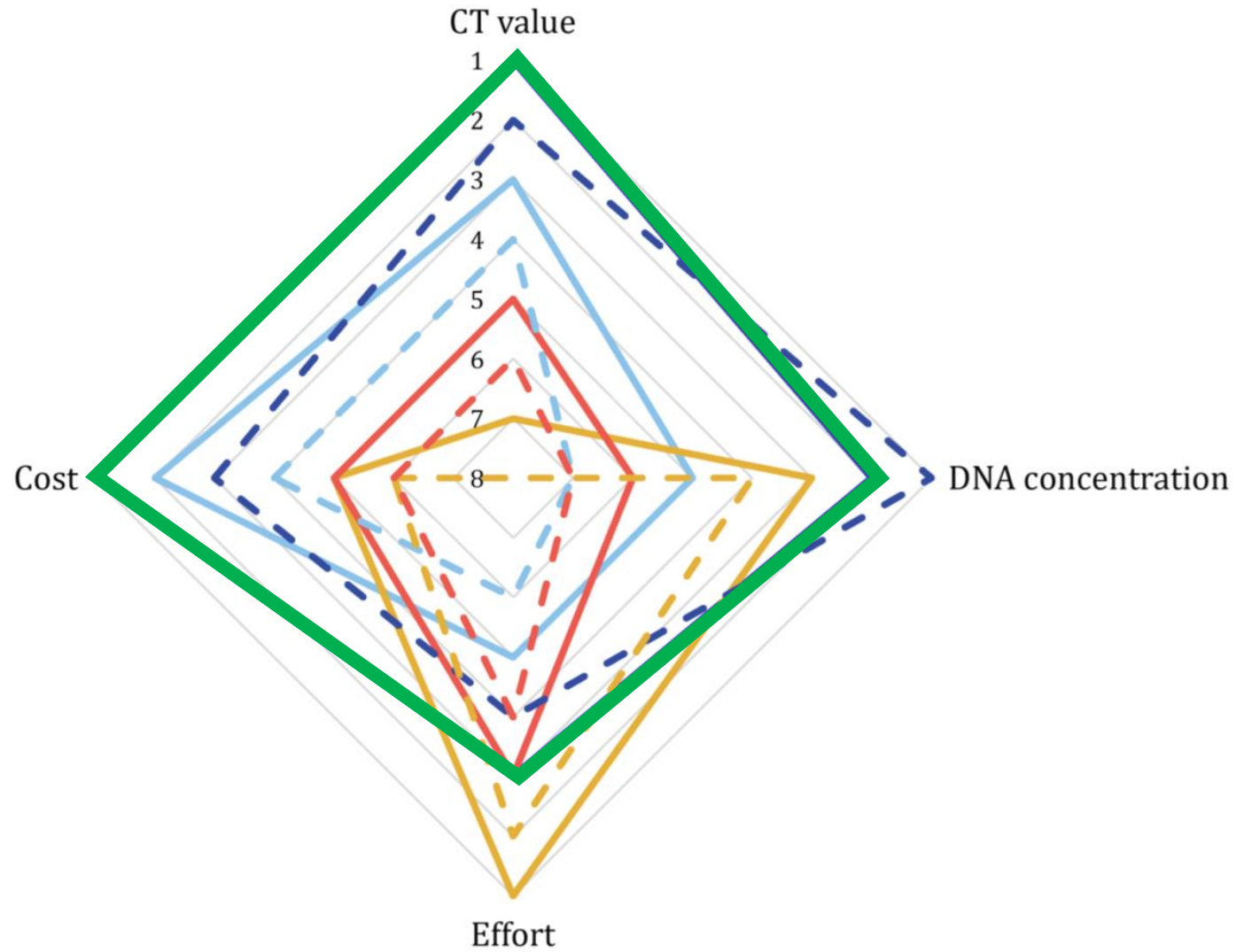


Qubit DNA concentration





- Trim Kingfisher
- Filter Kingfisher
- Buffer 20 min Kingfisher
- Buffer 18hr Kingfisher
- - Trim Qiacube
- - Filter Qiacube
- - Buffer 20 min Qiacube
- - Buffer 18hr Qiacube

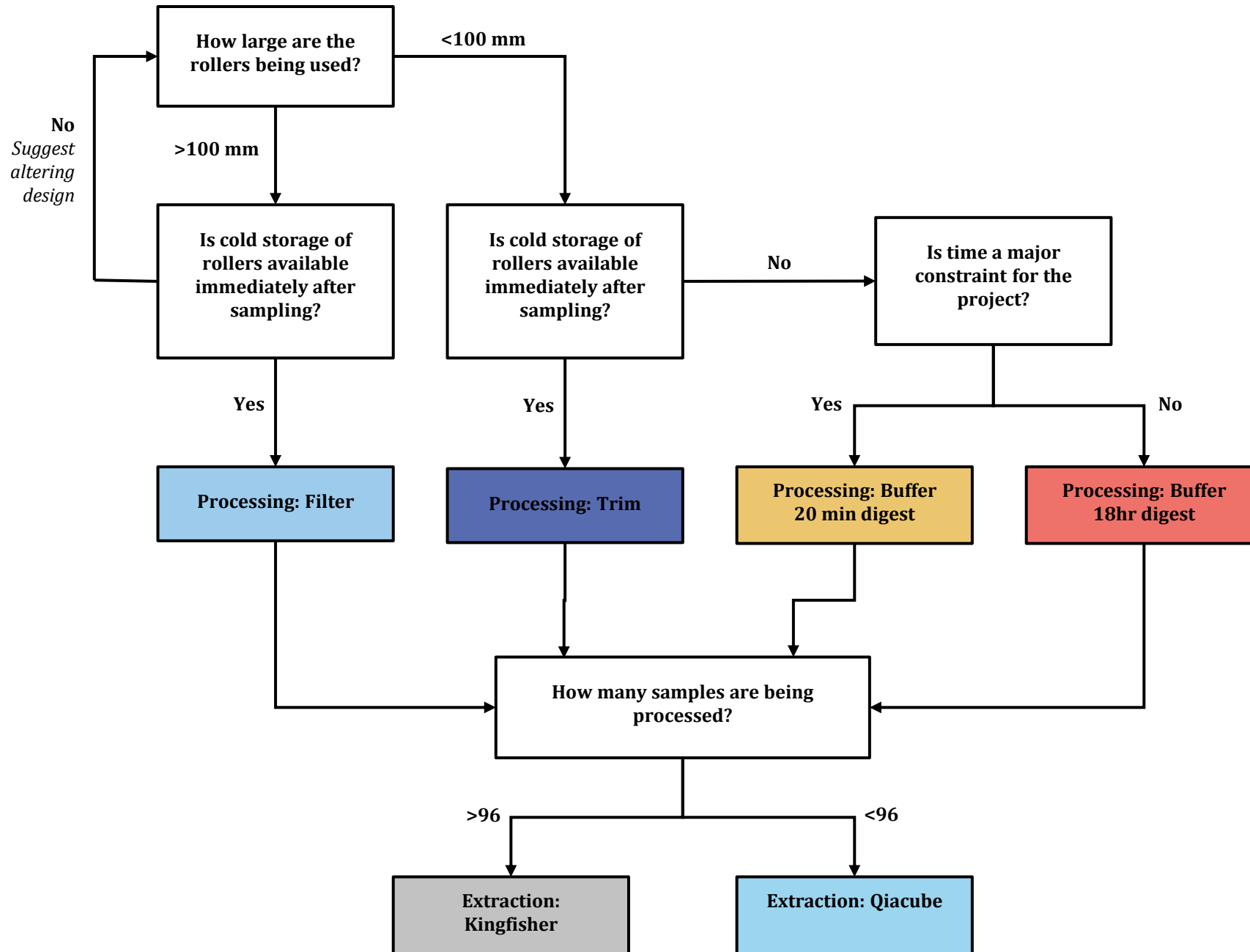


Trim Kingfisher
Trim Qiacube

Filter Kingfisher
Filter Qiacube

Buffer 20 min Kingfisher
Buffer 20 min Qiacube

Buffer 18hr Kingfisher
Buffer 18hr Qiacube





Brush-tailed Phascogale
(*Phascogale tapoatafa*)



Yellow-footed Antechinus
(*Antechinus flavipes*)

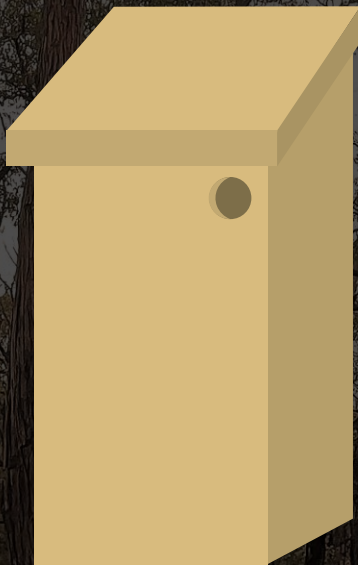


Western Pygmy Possum
(*Cercartetus concinnus*)



Red-tailed Phascogale
(*Phascogale calura*)





Brush-tailed Phascogale
(*Phascogale tapoatafa*)



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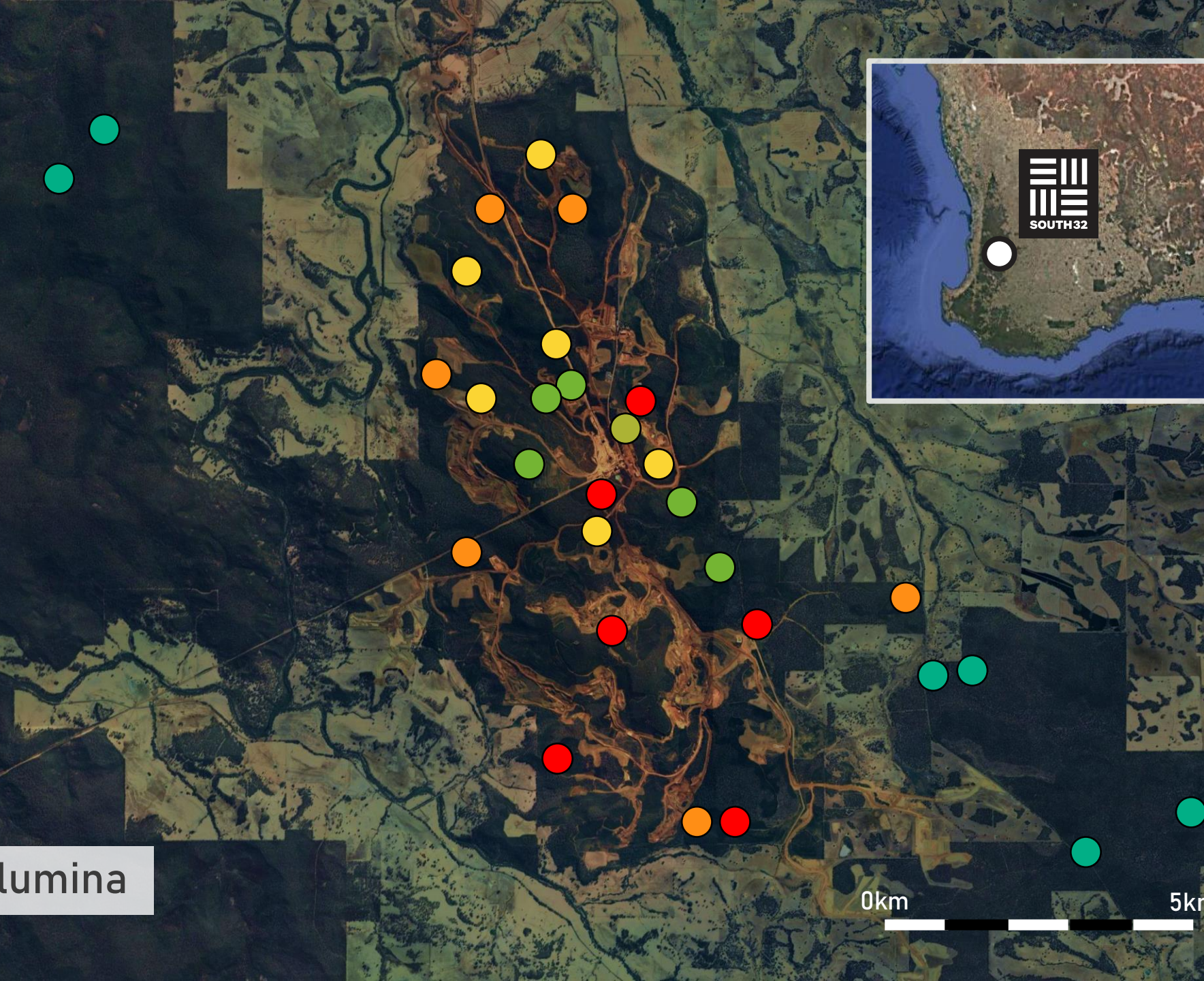
South32 Worsley Alumina



- REF
- 1980s
- 1990s
- 2000s
- 2010s



South32 Worsley Alumina



- REF
- 1980s
- 1990s
- 2000s
- 2010s



Brush-tailed Phascogale
(*Phascogale tapoatafa*)



0km 5km

- REF
- 1980s
- 1990s
- 2000s
- 2010s



Brush-tailed Phascogale
(*Phascogale tapoatafa*)

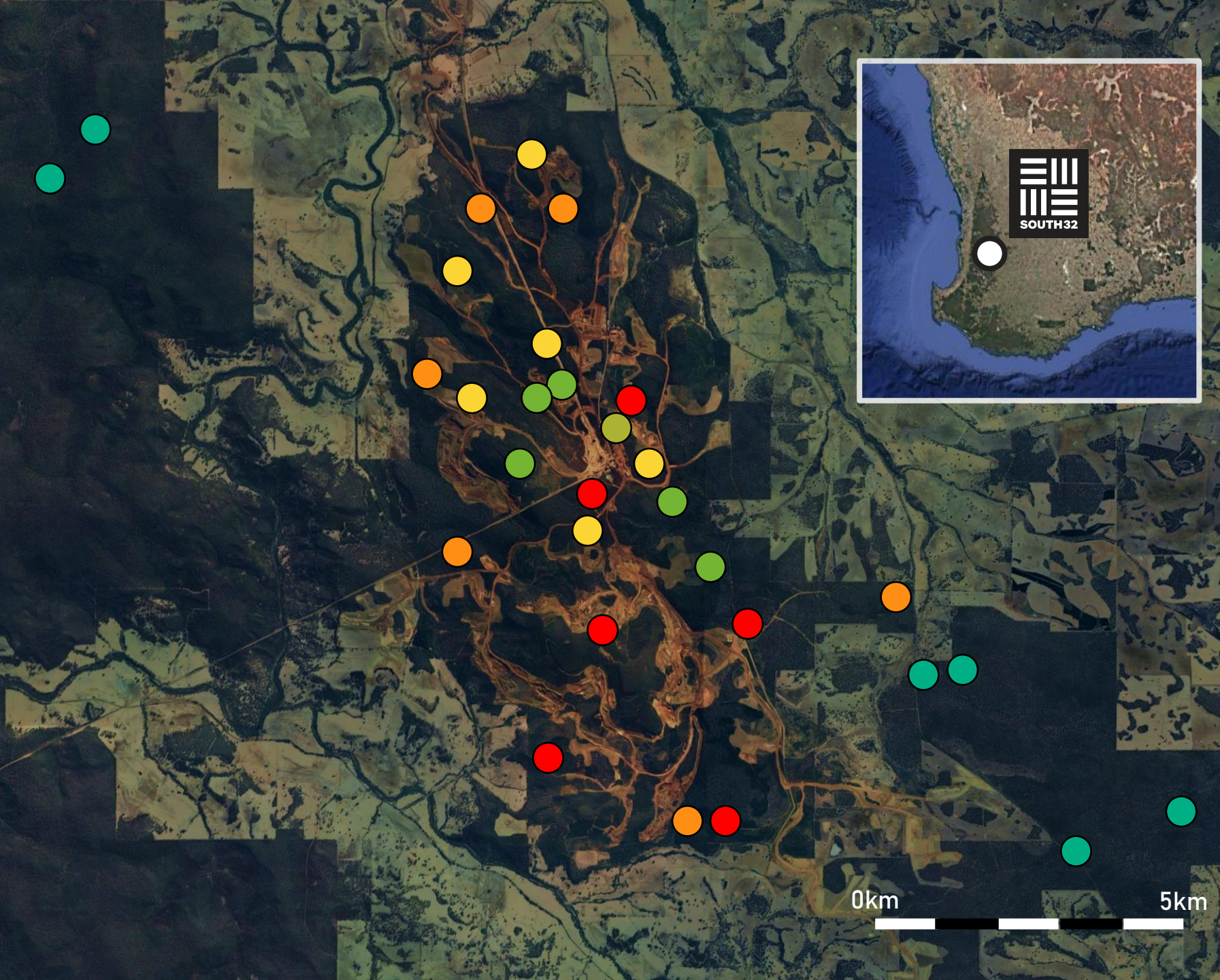
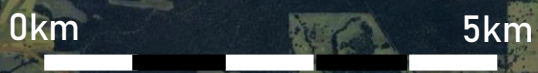


0km 5km

- REF
- 1980s
- 1990s
- 2000s
- 2010s



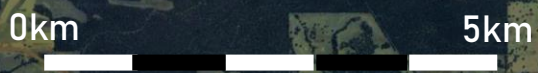
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(*Phascogale calura*)



- REF
- 1980s
- 1990s
- 2000s
- 2010s



Red-tailed Phascogale
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- REF
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- 2010s



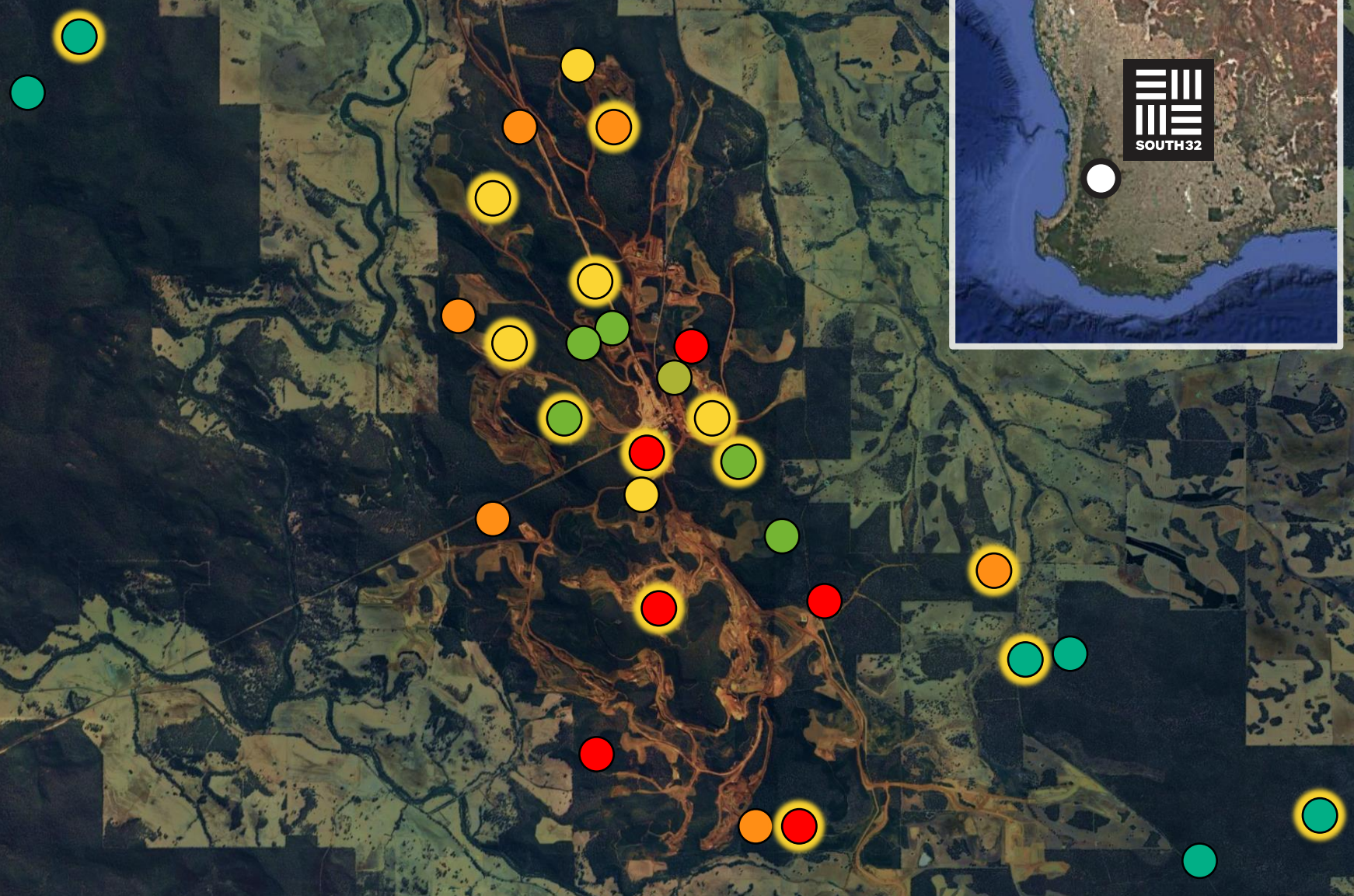
Yellow-footed Antechinus
(*Antechinus flavipes*)



- REF
- 1980s
- 1990s
- 2000s
- 2010s



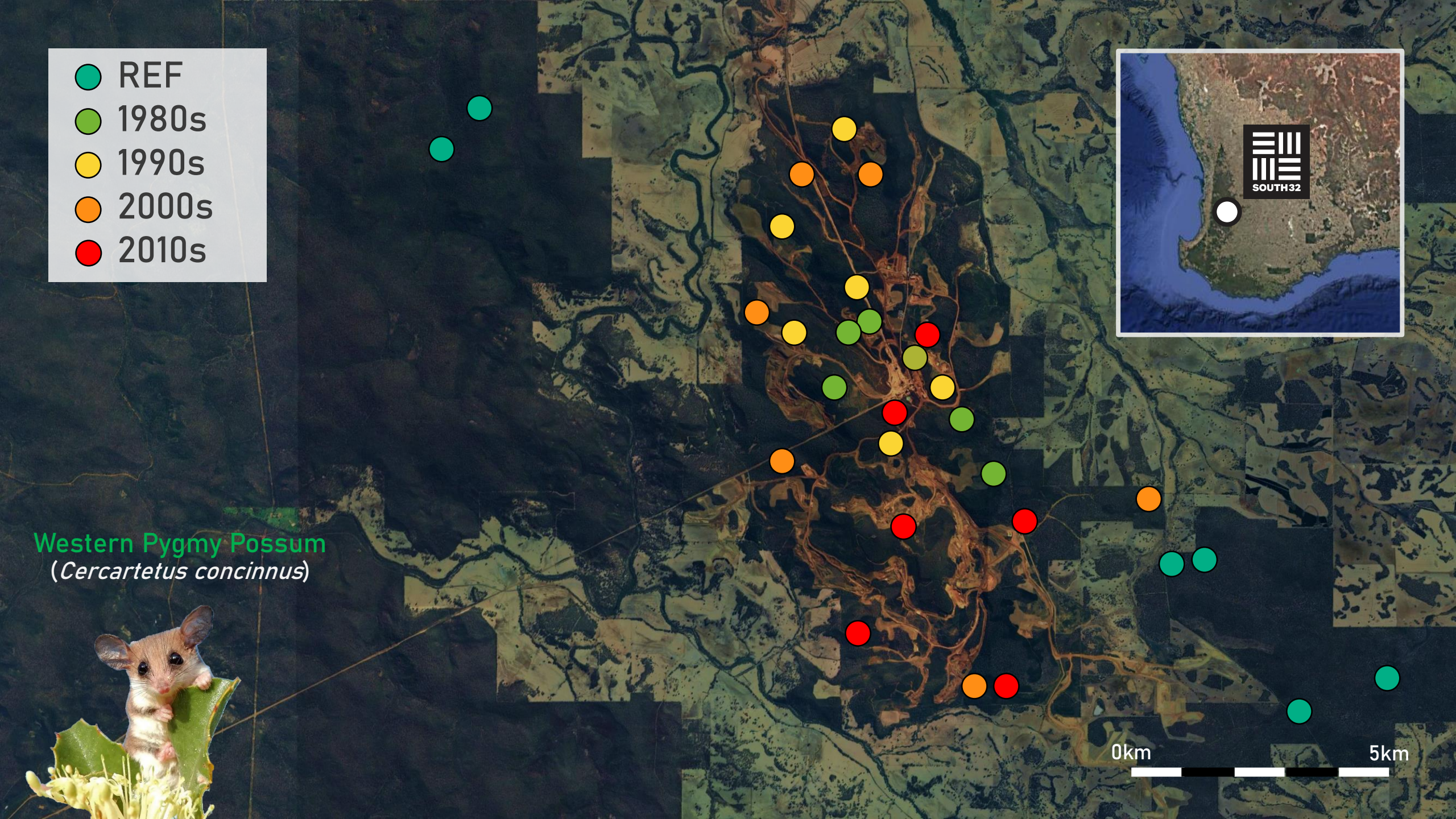
Yellow-footed Antechinus
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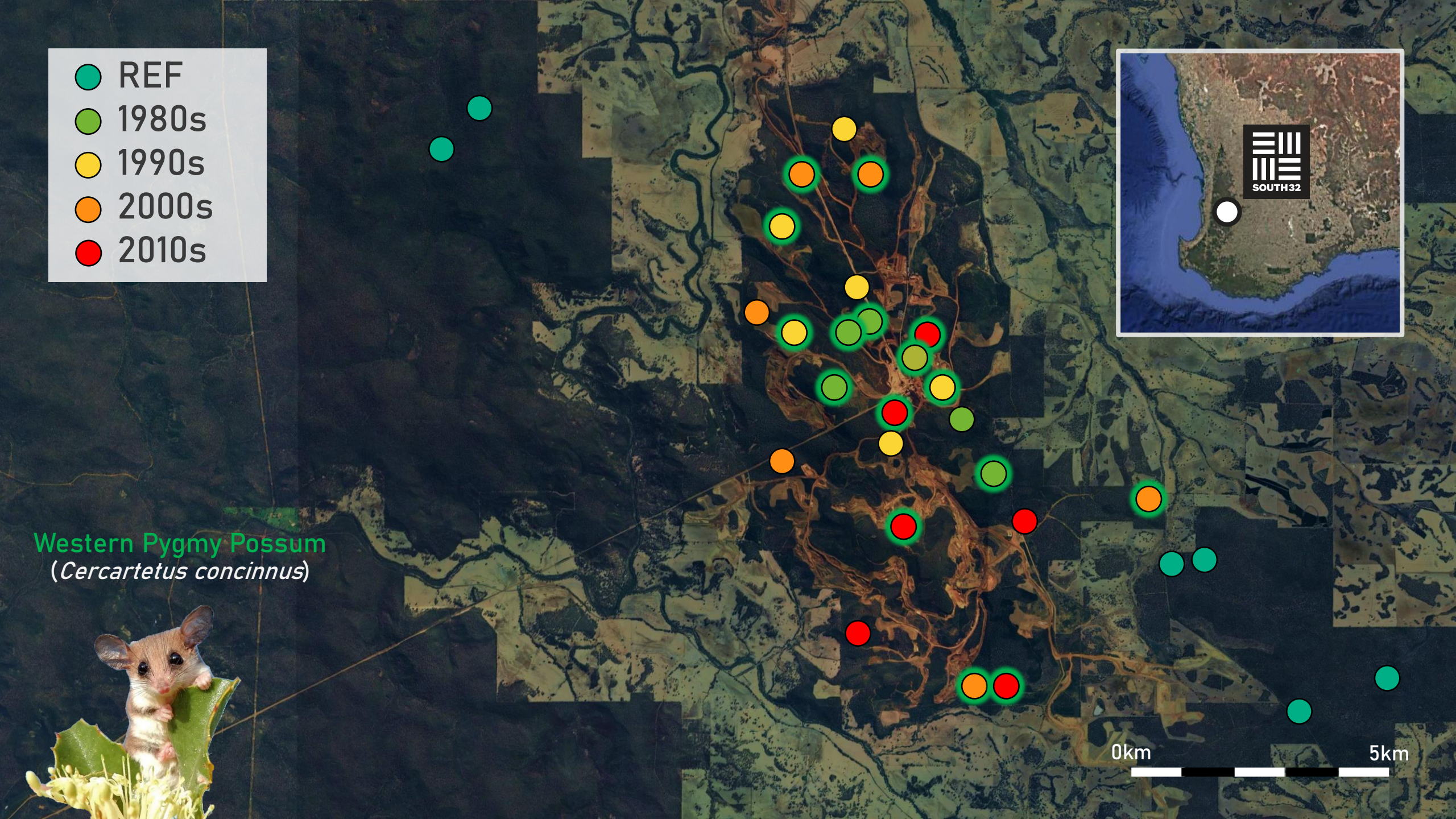
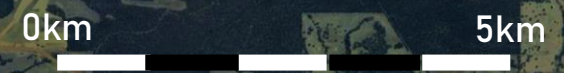
Western Pygmy Possum
(*Cercartetus concinnus*)



- REF
- 1980s
- 1990s
- 2000s
- 2010s



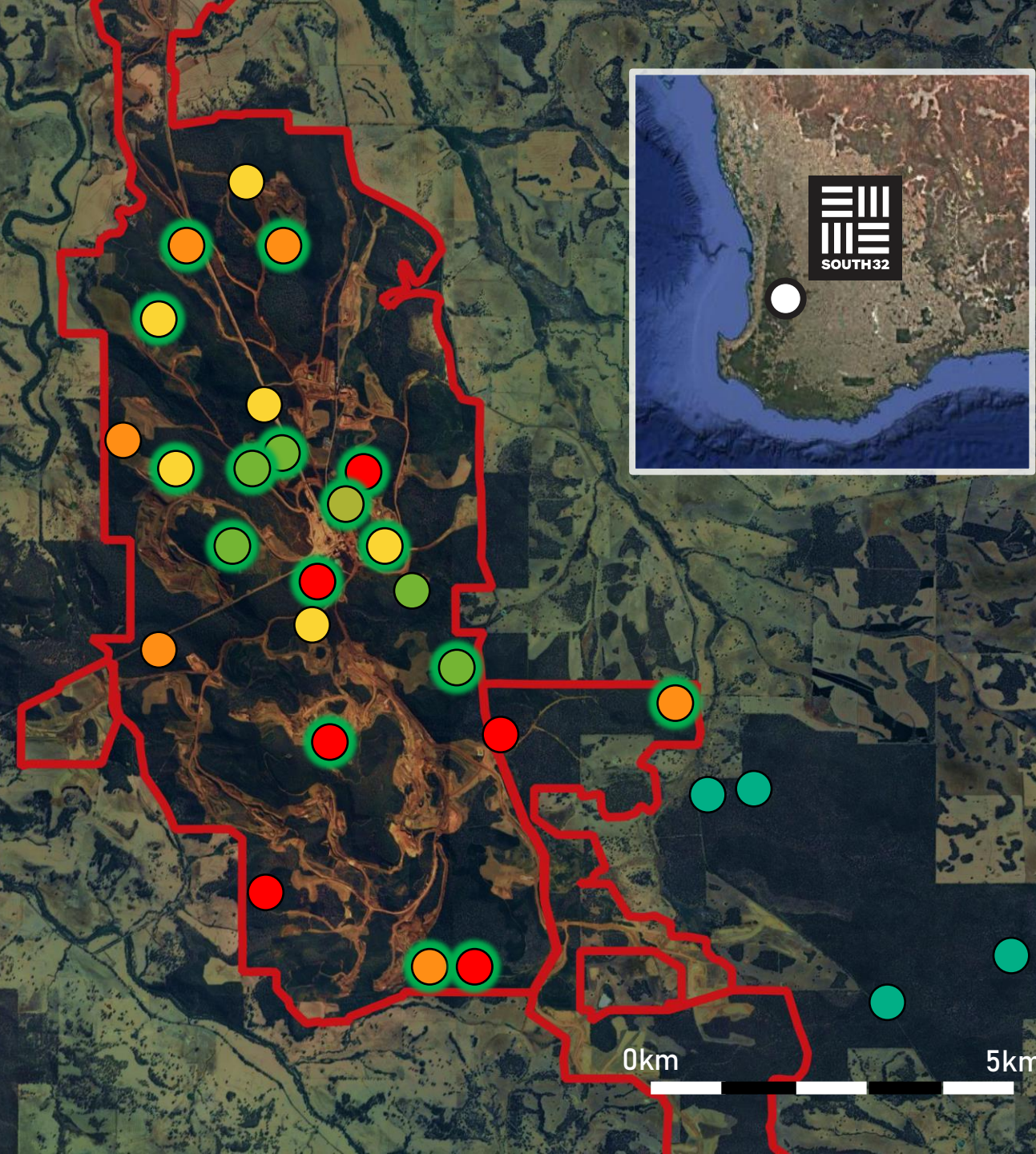
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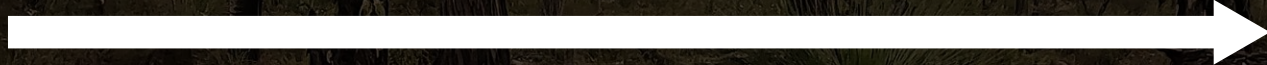
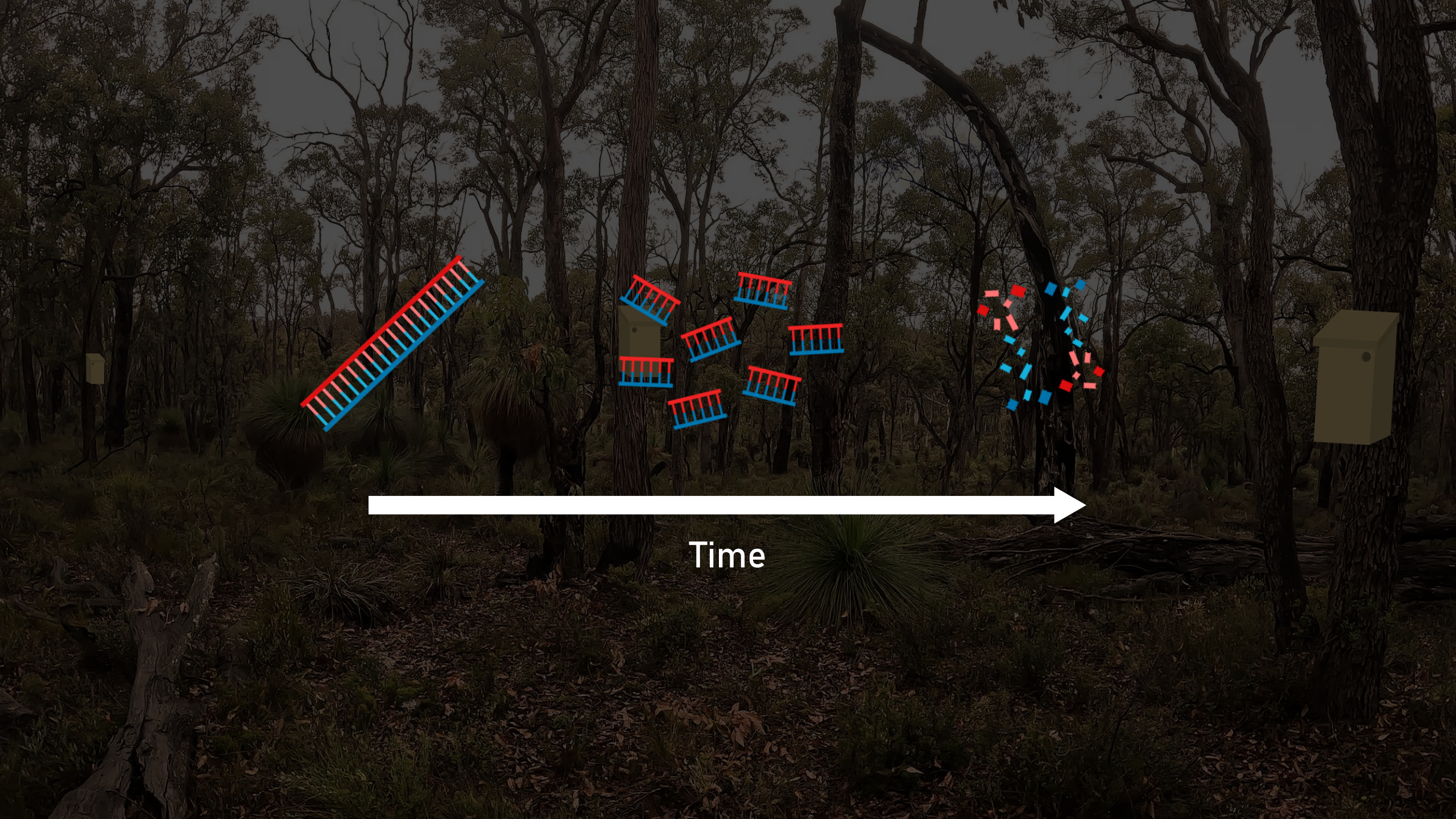


Western Pygmy Possum
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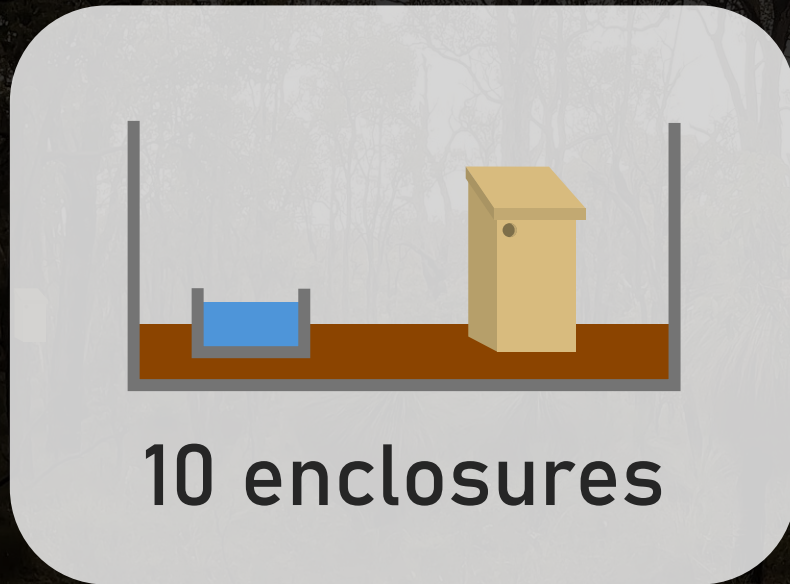




Time

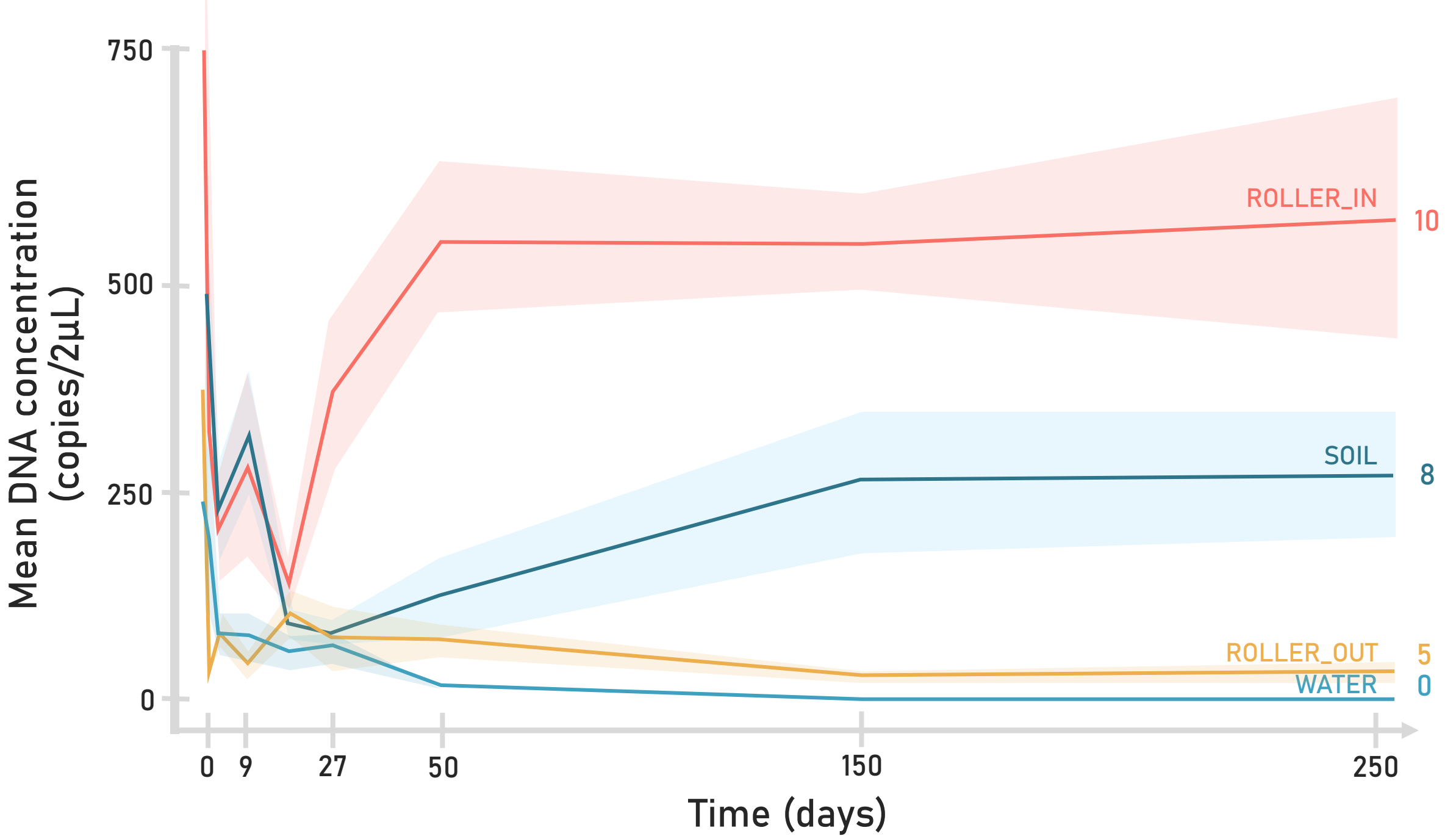


eDNA Degradation study



Red-tailed Phascogale
(*Phascogale calura*)



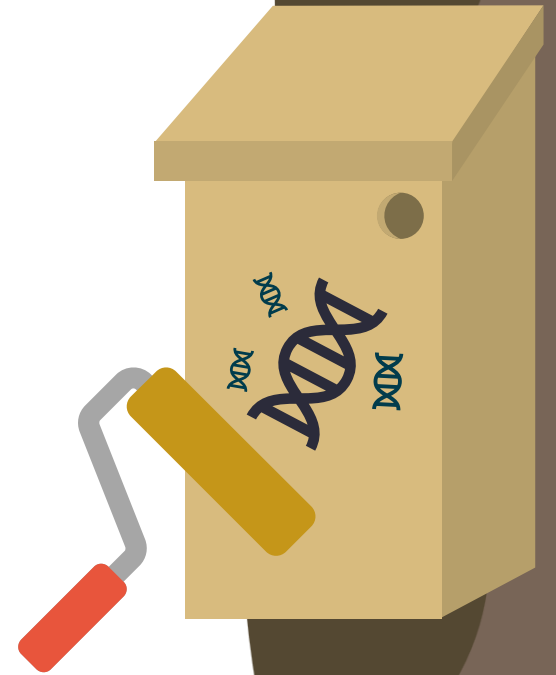


Summary

 Study-specific sampling design is key

 Use of rollers to monitor restoration

 Extended terrestrial DNA persistence



Summary

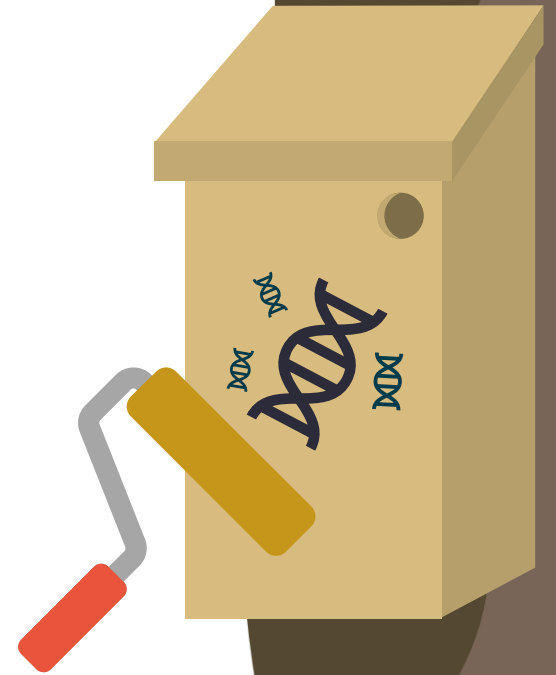
 Study-specific sampling design is key



Use of rollers to monitor restoration



Extended terrestrial DNA persistence

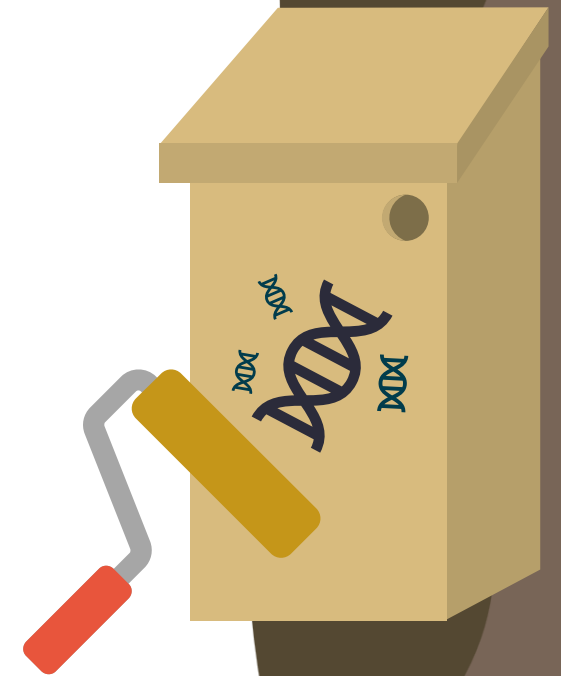


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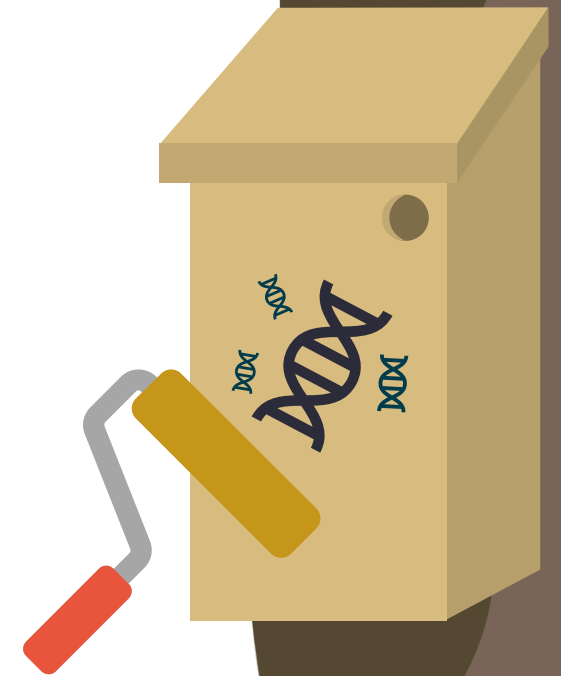


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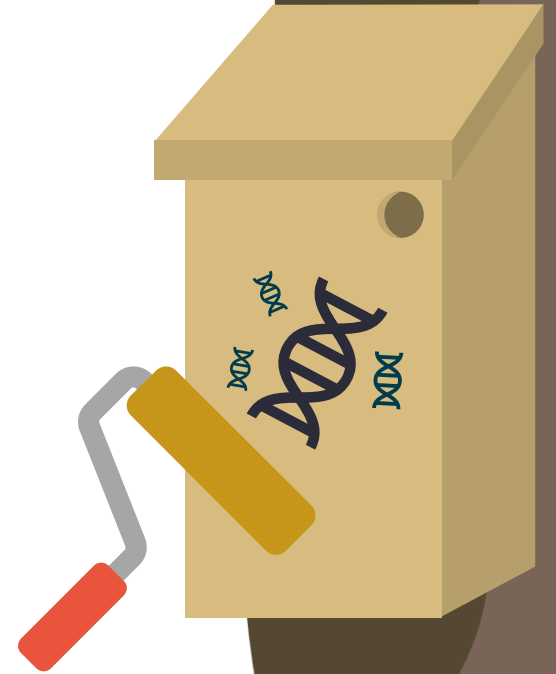


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MBioMe
Mine site Biodiversity Monitoring with eDNA