



Conclusion

Camera trapping technology has led to a surge in the collection of large ecological datasets. This provides an unmissable opportunity to study rare, protected and sensitive species, as well as to help resolve numerous of the burning ecological questions that are crucial in dealing with ecological communities. This thesis showed that camera traps can provide good sensor networks for the space-time monitoring of terrestrial mammal communities; it also provided new analytical methods to explore large camera trap datasets and attain deeper knowledge of the mammal community assembly and structure, over space and time. This methodology can be transposed, adjusted and applied to other camera trap studies, conducted on different areas and/or at different times.

Hutchinson (1965) developed the term ‘ecological theatre’; in this theatre, ‘acts’ are played out on different spatial and temporal scales [149]. Understanding the full extent of the drama requires us to watch it on the appropriate sampling scales. Although geologists, geographers, oceanographers, physicists and mathematicians address scaling as a primary focus of their investigations, ecologists have taken much longer to recognise that ecological processes and patterns are sensitive to differences in scales [145, 192, 362]. Local communities, such as that of the mammal species of the Little Karoo, are neither closed nor isolated, which is why it will be insightful to embrace the metacommunity concept and explain these patterns of distribution, abundance and interaction at multiple scales of spatio-temporal organisation [192].

The activity level (movement) of mammal species is optimised throughout the day and endogenous schedules are adjusted by environmental (exogenous) conditions. This explains why species are expected to show variations in their diel activity rhythm throughout different latitudes and landscapes. Investigating the environmental processes influencing the diel activity rhythm of mammal species at different locations and various spatial scales would provide great insights into the mammal community assembly and structure.

Studies of seasonal shifts in diel activity rhythm among mammal communities would benefit from datasets that compile information collected over several consecutive years. Inter-year comparisons would enable us to determine whether observed versatilities within seasons are stable with respect to different years.

It would be precarious to extrapolate the results and findings of the study of species' habitat preferences to a broader landscape than that of the Little Karoo. However, if similar studies were conducted on habitat-use patterns within mammal communities inhabiting a variety of study sites in the Western, Eastern and Northern Cape Provinces, it should be possible to build a distribution map with suitable habitat for each species, based on ruggedness preferences. Additional camera trap studies would then need to be implemented in order to ground truth projections. Similarly, if supplemental spatially explicit capture-recapture studies were conducted on the density-ruggedness relationship within leopard populations inhabiting multiple study sites in the three Cape Provinces, it ought to be feasible to produce leopard density maps and to delimit the area in which leopards occur regularly.