Simbalbara National Park – Methods-Focused Summary

1. Vegetation Sampling

• Rapid reconnaissance survey; study area divided into beats and grids.

• Quadrat Method:

– Trees & saplings: 10×10 m quadrats; shrubs: 5×5 m; herbs: 1×1 m.

– CBH (1.37 m height) measured for woody species.

– Quantitative metrics: frequency, density, abundance, basal area, IVI, PV.

– Diversity indices: Shannon–Wiener, Simpson dominance, Pielou evenness.

– Regeneration assessment using standard seedling–sapling–tree comparisons.

• Transect Method:

– Eight 1■km transects across habitat types.

– Six circular plots (15 m radius) every 200 m for tree/sapling data.

– Nested shrub and herb plots within each circular plot.

2. Mammal Survey (Camera Trapping)

• 31 camera trap stations deployed in a 1 km² grid.

• Two sampling blocks: Mar–Apr 2021 and Apr–May 2021.

• Cuddeback X■Change™ cameras placed 30–45 cm above ground; 2■sec trigger delay.

• Cameras placed along trails, ridgelines, drains, and areas with carnivore signs.

• Monitoring every two weeks; battery/memory card changes.

• Identification using field guides; independent photo events pooled for analysis.

• Metrics: trap nights, Relative Abundance Index (RAI), encounter rates.

3. Fish Diversity

• Aquatic sampling in headwater streams and tributaries.

• Cast nets, drag nets, hand nets used depending on stream width/flow.

• Specimens examined for morphometrics, meristics; identified using standard keys.

• Habitat variables recorded: substrate, water depth, flow, canopy cover.

4. Herpetofauna

• Visual Encounter Surveys (VES) along transects and opportunistic searches.

• Nocturnal surveys for amphibians; diurnal searches for reptiles.

• Microhabitat associations recorded (litter, rocks, tree holes, riparian edges).

5. Avifaunal Surveys

• Line transects (1–2 km) and point counts at fixed intervals.

• Early■morning sampling to maximize detectability.

• Calls cross■verified with field guides and published sonograms.

6. Insect Sampling

• Sweep■netting, light trapping, pitfall traps used across vegetation zones.

• Standardized effort per beat to ensure comparability.

• Specimens identified to family/genus using regional keys.

This one■page summary highlights the multi■taxa, multi■method design integrating vegetation analysis, camera trapping, aquatic surveys, and faunal assessments for a comprehensive biodiversity appraisal of Simbalbara National Park.