

Reference site

Restored forests

Degraded lands

Church forest (CF)

State forest (SF)

Community managed forest (CMF)

Shrubland (SL)

Cropland (CL)



Specialized taxa

Low diversity

Homogenous selection

NH₄ oxidizers & nitrifiers



Intermediate, partial restoration

Prokaryotic community



Stress tolerant taxa
Homogenous + stochasticity

⚠ NO₃ reducers
Mn oxidizers



Ecosystem decline

Native trees associated with beneficial microbes, sustaining nutrient cycling, & ecosystem health.