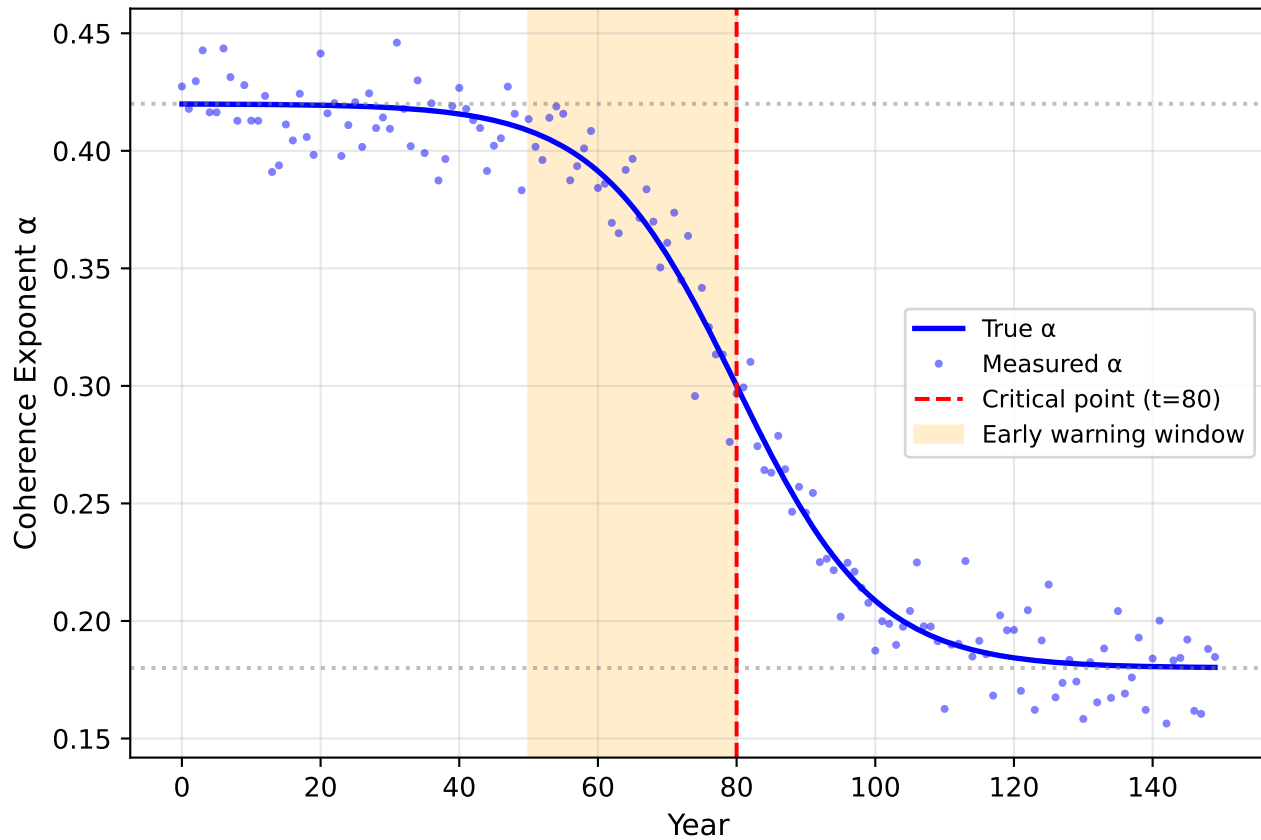
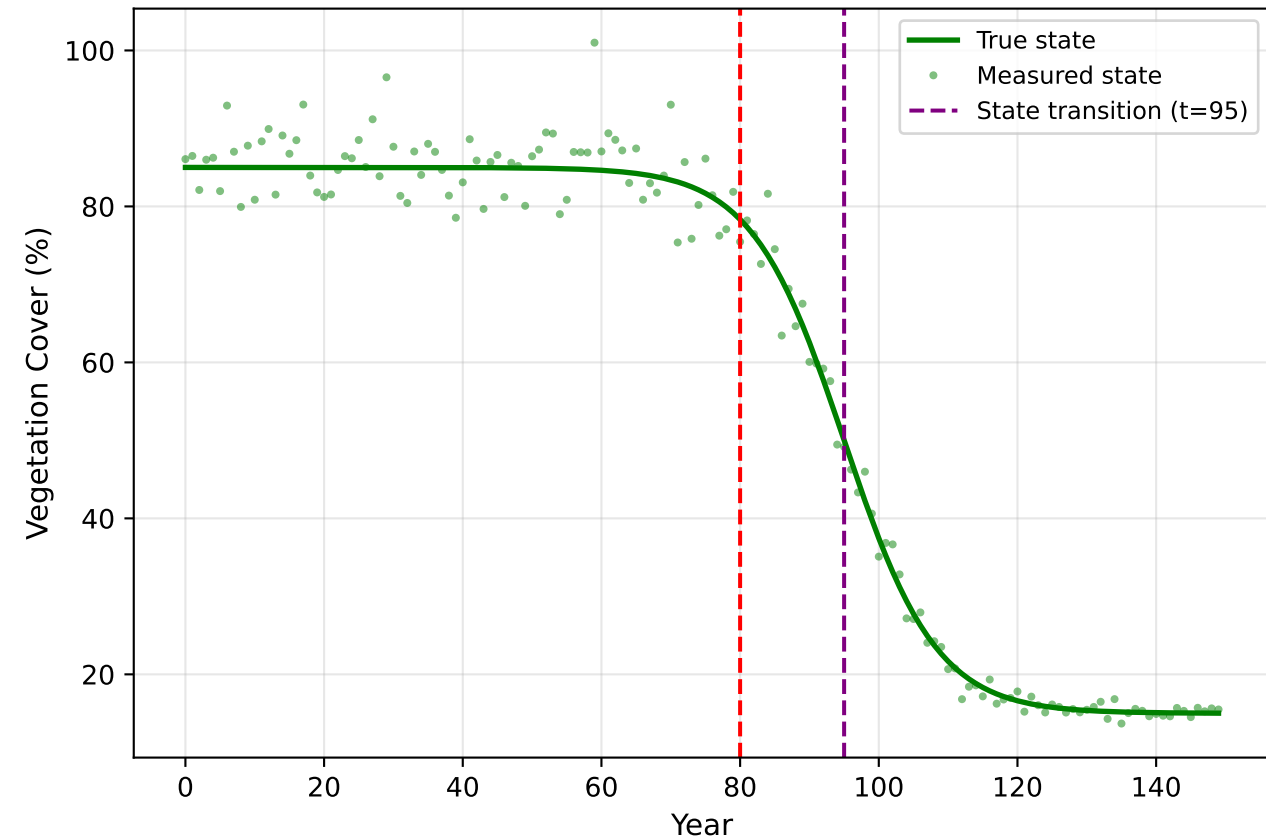


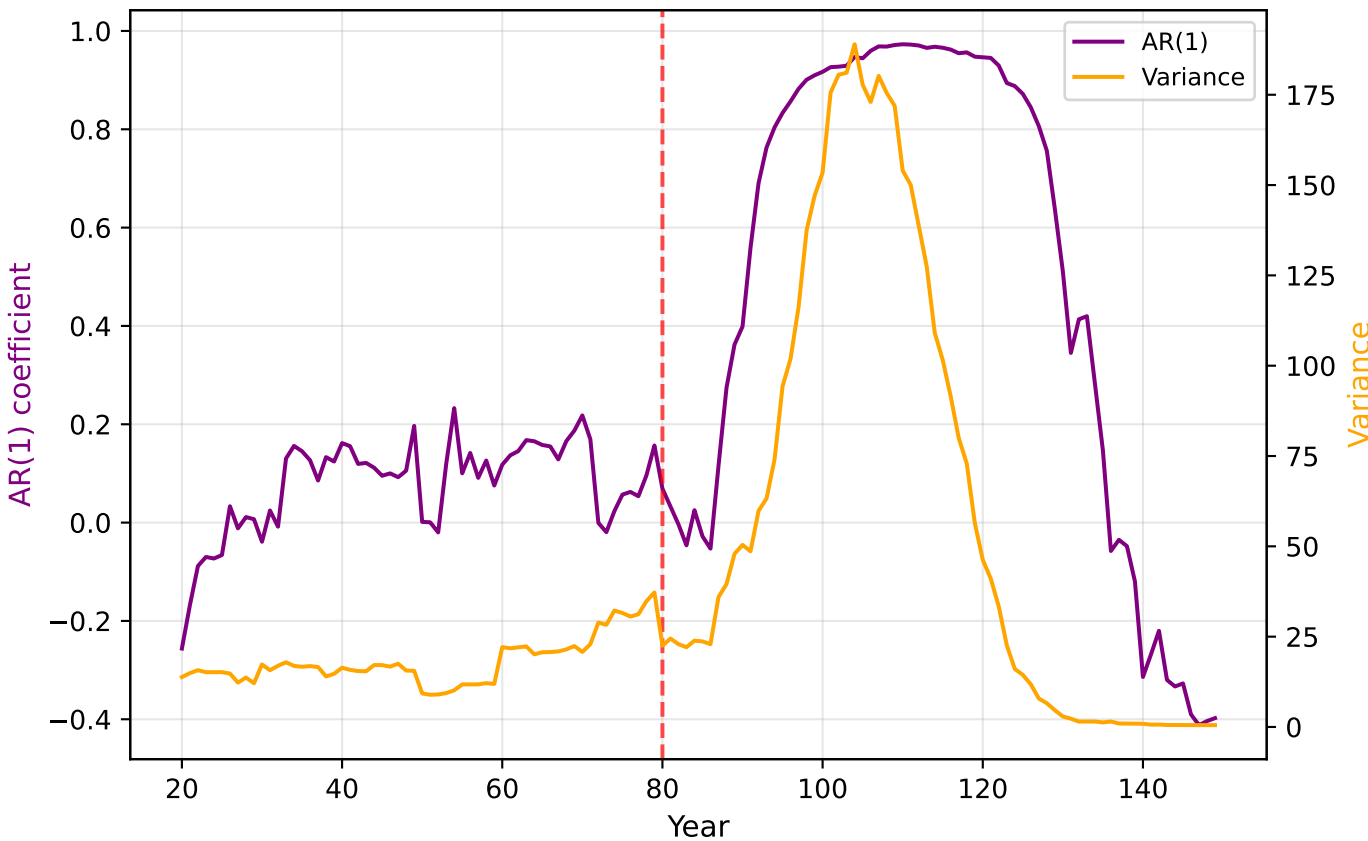
α Decline: Early Warning Signal
(α drops BEFORE state transition)



Ecosystem State
(State transition is DELAYED)



Classical Early Warning Signals
(Autocorrelation & Variance)



Early Warning Detection Comparison
 α decline provides earliest warning

