**Supporting Information Text S1: Measurement of constancy and contingency using the method proposed by Colwell 1974**

Measures of predictability, constancy and contingency are derived from the mathematics of information theory, more precisely from the Shannon information statistics. Imagine a frequency matrix, where there are t columns representing times within a cycle (in our case 24 as we considered 2 NDVI values per month) and s rows representing the states of the phenomenon (in our case 10 different NDVI classes; 0-0.1, 0.1-0.2, …0.9-1). Let Nij be the number of cycles for which the phenomenon (in this case the NDVI value) was in state i at time j. Define the column totals (Xj), row totals (Yi) and the grand total (Z) as

Then the uncertainty with respect to time is

The uncertainty with respect to state is then

And the uncertainty with respect to the interaction of time and state is

Predictability (P) can then be defined as

Constancy is maximised when all rows but one are zero, while being minimised when all row totals are equal. A measure of constancy (C) with range (0-1) is given by

Contingency represents the degree to which time determines state, or the degree to which they are dependent on each other. An adjusted measure of contingency (M) with range (0-1) is given by

In this scenario, predictability (P) is simply the sum of constancy (C) and contingency (M), with P=C+M.