

A concept of dynamical biodiversity suggests the exogenous driving mechanisms

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The novel approaches to biodiversity concept based on dynamical population properties of the key biota species - habitants of the terrestrial ecosystems are put forward. According to the concept offered (which may be termed as the τ -diversity, where τ stands for time) the sustainable existence of ecosystems and successful adaptation of species to changeable habitats suggest the definite patterns of temporal behavior which includes an array of population indices cycles and geographical large-scale inter terrestrial space correlation. Some experimental facts and surveillance data supporting the prerequisites are as follows: biogeographical gradient in cycle length and amplitude in small mammals multiannual population size cycles from north to south Fennoscandia significantly correlates with the same species gradient found for NE to WS Hokkaido; the temporal correlation in the age structure of Curlew Sandpiper populations at Langebaan Lagoon, South Africa in relation to lemming cycles in Siberia; three-year cycles in breeding productivity of knots the longest migrating species *Calidris canutus* wintering in South Africa suggest Taimyr Peninsula provenance; 4-5 years length and acrophases of population cycles for microtine *Clethrionomys rufocanus* at Lapland Biosphere Reserve correlate with the same species cycle indices at Hokkaido; according to the Kluane Ecosystem Dynamics of the Boreal Forest Project, spatial synchrony in the near ten year cycles for varying hare (*Lepus americanus*) shows temporal correlation over $5 \cdot 10^6$ square km, etc. The Kluane project was carried out in the southwestern Yukon, where the participants failed to explain these phenomena in terms of interbiotic or traditional environmental factors. The initial driving mechanism for fine tuning of the described phenomena suggests the exogenous presumably cosmic provenance which may be rather easily disturbed by modern industrial influence.