



SCIENTIFIC COMPUTING

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PRINCIPLES CONCERNING MAXIMUM SUSTAINABLE YIELD IN ECOSYSTEMS

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Since the Johannesburg Implementation Plan, 2002, a number of legal documents started advocating the maximum sustainable yield (MSY) as a goal of fishery. The most recent is the EU Green Paper on Reform of the Common Fishery Policy (April 22, 2009) which advocates: "adoption of MSY as a management principle"

Review of recent results concerning application of MSY to ecosystems will be given. In particular: one population (well known); n- independent populations; prey-predator; food chains; n-competitors and n-mutualists. Results from analyzing particular food web models shed light on additional complexities. Finally, several principles are proposed for applying MSY policy to ecosystems. The key message is: applying MSY to top predators only, so that the harvesting effort is specific and adjusted to each predator population, is unlikely to compromise persistence of other species in an ecosystem, while for any other application of MSY, extinction of other species is likely to occur. Hence, in later cases application of MSY is not recommended. Instead one should resort to careful monitoring of fishing to sub-MSY intensity so that the persistence of other species is not compromised.

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NATURAL PERCEPTUAL UNIVERSAL LAWS (PUL) – BRA = 3.6 MS; AMA = 25 MS; MA = 175 MS; BRAMA = 1225 MS – USED IN THE LIFE, BUSINESS AND SCIENTIFIC COMPUTING

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Abstract

BRA = 3.6 ms , AMA = 25 ms , MA = 175 ms , BRAMA =1225 ms are the natural perceptual universal laws explaining the animal and human cell brain, mind and sex.. They explain the neural and behavior time sequences and related waves. Equations are a set of harmonic waves , one for each possible frequency: 277 Hz ; 40 Hz (beta gamma range) ; 5.7 Hz (experience, consciousness) ; 0.6 Hz .Computer simulated flocks of Primary Oscillators are in a perfect match with the experimental data: the Evoked Potential EP records, including N400, triggered by verbal stimuli ;