O 42. THE ECOSYSTEM COMPLEXITY AND THE OVERLAP BIOACCUMULATION INDEX (OBI) AS A TOOL FOR THE MANAGEMENT OF MARINE ECOSYSTEMS

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ABSTRACT: In this survey we have built, for the first time, the control charts for the metal's bioaccumulation in two selected biomonitors (mollusks) in the Beagle Channel (southern Patagonia). We have then determined the range of overlaps of metal concentrations and the overlap bioaccumulation index (OBI) with respect to the upper (OBI-L) and lower (OBI-L1) bound of the overlap range. For this purpose, we applied the probabilistic Johnson's method (1949). The use of OBI as an integrated tool in marine environmental management consents to identify the specific biomonitor (or biomonitors) needed for a particular condition of contamination that can arise from natural or anthropogenic activities. The second aim is to analyze the theoretical and practical implications of the OBI index and its relative guidelines for the environmental management. Marine ecosystems are complex systems. According to the Ashby's Law (1957, 1958), the understanding of a complex system (requisite variety) depends on the information variety owned by the observer. In view of this, here we propose to conceptualize the wide set of biomonitoring knowledge capacity as an open and evolutionary endowment of information variety supporting the environmental management. These theoretical and practical implications will be fully debated.

Keywords*: Biological monitoring, Beagle Channel, Mytilus chilensis, Nacella (P) magellanica, Baseline metal levels, Johnson's method, Control charts, Environmental performance, Information variety*