

Adopt and adapt nature's design principles to create sustainable aquaculture systems

ABSTRACT

Sustainable development of aquaculture faces many constraints. An approach that offers solutions to these challenges is emulating nature's patterns and strategies. There are many elements of sustainability employed by nature that can be adopted for aquaculture systems through necessary adjustments (or adaptations). Analysis of empirical data generated by a series of experiments on different aquaculture systems generated new knowledge of practical importance. An outcome of the analysis pertaining to two important aspects of aquaculture, the sex control in captive stocks of commercially important protogynous hermaphrodite grouper and the operation of integrated multi-trophic aquaculture systems is presented here. Both cases serve as outstanding examples of the relevance of examining and applying nature's principles for finding sustainable solutions to aquaculture problems.