

Aquarium Fish: Computers and Tokogenetics

Bonus content from the March 2009 AFI magazine article "Seeking Cichla?"

By Robert J. Goldstein

Computer-assisted tools are used to define self-perpetuating populations (in other words, populations that continue to breed as a single species unit). These computer programs can take large amounts of meristic and location data (and other data), and sort them into "tokogenetic" groups. Tokogenetic groups are more specific and meaningful than "subspecies" or species because they are based on data-laden and data-manipulated evidence that a collection of populations is either isolated or not isolated from adjacent populations. Said another way, it's the use of computer programs to sort the limits of the interbreeding or tokogenetic group (including its subgroups). We used to base subspecies on markings, meristics, morphometrics or the drainages in which they're found. The computer-derived assemblages look different and are a more realistic assessment of the genetic unit (the genotype of the population) that is evolving.

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