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## Conservation of green sea turtles through genetics and genomics

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Sea turtle living on the Israeli beach of the Mediterranean are endangered species. The green turtles (*Chelonia mydas*) are in the most severe danger and there are only about a dozen nesting females. The attempt to evaluate their genetic variation using the common haplotyping system, based on sequence analysis of a segment of the mitochondrial DNA (mtDNA) control region (D-loop) as an indicator, revealed very little polymorphism. Sequencing of the 3' region of the mitochondrial D-loop allowed us to construct a new haplotyping system composed of four different STR sizes for each mtDNA sequence. Our new mtSTR (mitochondrial STR) haplotyping approach revealed 35 different haplotypes within the nesting and stranded sea turtles along the Mediterranean Israeli seashore. The mtSTR haplotyping system not only fingerprints individual turtles but can also be used to estimate phylogenetic distances. This case study shows that the mtSTR haplotyping is applicable for the study of global green sea turtle population. We have also initiated the sea turtle genome project. Though the full assembly is far from completion, we were able to develop a method for identifying polymorphic markers for population studies.

### Biography

Yaron Tikochinski, (PhD- Genetics) is an Associate Professor of Marine Biology, at the Marine Sciences School, Ruppin Academic Center. He got his B.Sc in Agriculture, M.Sc in Genetics, and PhD in Genetics and Immunology at the Hebrew University in Jerusalem. He is an experienced researcher in the Israeli Biotechnology industry. He is the Co-founder CEO and CSO of several human diagnostics and therapeutics companies like IntelliGene and Genetico.

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