

COMISION INTERAMERICANA DEL ATUN TROPICAL (CIAT) INTER-AMERICAN TROPICAL TUNA COMMISSION (IATTC)

Call for Consultancy: Development of a High-Throughput Panel for Genotyping Silky Sharks at the Inter-American Tropical Tuna Commission

The Inter-American Tropical Tuna Commission (IATTC) invites applications of individuals/entities to a consultancy on the development of a targeted genotyping panel for high-throughput kinship assignment and close-kin mark-recapture (CKMR) assessment of silky sharks (*Carcharhinus falciformis*) in the eastern Pacific Ocean (EPO).

The IATTC is the regional fisheries management organization responsible for the implementation of the 2003 Antigua Convention, the objective of which is to ensure the long-term conservation and sustainable use of the stocks of tunas and tuna-like species and other species of fish taken by vessels fishing for tunas and tuna like species in the eastern Pacific Ocean. It is comprised of 21 members as well as a few Cooperating Non-members. More information about the IATTC can be found at www.iattc.org.

Sharks and other elasmobranchs are increasingly important components of the ecosystems and fisheries of the eastern Pacific Ocean, and robust estimates of their abundance are essential to the conservation and management responsibilities of the Commission. Close-kin mark-recapture (CKMR) is an emerging genetic/genomic approach that can provide such estimates of abundance and related demographic parameters. Project design simulations suggest that CKMR will require many thousands of individuals to be genotyped to identify sufficient kin pairs for reliable parameter estimation in EPO silky sharks. The Commission therefore seeks to engage an expert to assist with the development of a targeted genotyping panel that can be used to assign first- and second-order kin for CKMR. The panel will be developed by the consultant using tissue samples collected by IATTC staff and associates. This project is envisioned to be completed by the end of 2028. In view of the specialized nature of this work, it is important that the expert have substantial and direct experience with the needs of CKMR analysis.

The goal of the consultancy is to produce a targeted SNP (and/or microhaplotype) genotyping panel that will enable rapid cost-effective genotyping of thousands of individuals and reliable identification of first- and second-order kin. The consultant is expected to hold regular consultations with the IATTC throughout the development process to ensure clear communication and alignment with project objectives. The terms of the consultancy will be fulfilled once the panel has been tested and found to produce high quality data with sufficient power to detect second-order kin.

Selection Criteria

The essential criterion for selection of the consultant for this project is the ability to produce a targeted SNP (and/or microhaplotype) genotyping panel suitable for the IATTC's CKMR needs at a competitive cost and timeline. Preference will be given to applicants with an expressed interest

in long-term collaboration, commitment to data accessibility, and support for transferable genomic resources. Experience in epigenetic aging and/or capacity to develop and apply age-estimation tools for wildlife species will be considered an additional asset. Consideration will be given to the logistics of shipping silky shark (a CITES Appendix II listed species) tissue samples from sampling locations or the IATTC offices in La Jolla, CA, USA to the offices of the selected consultant. Consideration also will be given to the estimated costs of applying the panel developed under this contract at production scale (tens of thousands of samples) in the future.

Production genotyping of future samples is outside this budget, but projected per-sample costs of applying the developed panel will be considered in the evaluation of candidates.

Terms of reference

Specific deliverables expected from this project are

- A high-throughput, transferable SNP (and/or microhaplotype) genotyping panel suitable for large-scale kinship inference in silky sharks.
- Empirical validation of the panel using samples provided by the IATTC.
- Demonstration of reliable kinship assignment through simulations, empirical analyses, or both, showing reliable identification of parent-offspring and half-sibling relationships at error rates appropriate for CKMR applications.
- Documentation of panel characteristics, including the number of loci, marker performance, call rates, and recommended quality-control thresholds.
- A final technical report summarizing panel development, validation results, expected kinship-assignment power, limitations, and recommendations for future application.

Application Process

Applications may be submitted in either English or Spanish and should be sent no later than October 30th 2026, in electronic format to tmusano@iattc.org

Applications should include the following:

- A cover letter summarizing the proposed project and plan for producing the deliverables outlined in the Terms of Reference, along with succinct descriptions of the relevant qualifications of the candidate(s).
- Curriculum Vitae of the key individual(s) to be involved in the contract work
- A list of references with recent knowledge of the applicant's (individual or entity) qualifications and experience that may be contacted by IATTC staff.
- Quotes for the following services:
 - Total cost and timeline for development of a high-throughput genotyping panel from at least 96 samples, targeting either:
 - 4,000 - 5,000 biallelic SNPs, or
 - 400-500 microhaplotype loci.
 - Estimated per-sample cost for DNA extraction.
 - Estimated per-sample cost for application of the panel to future sample