A blank area on the map – Molecular identification and shark population dynamics: implications for conservation based on artisanal fishing on the coast of the Eastern Tropical Pacific.

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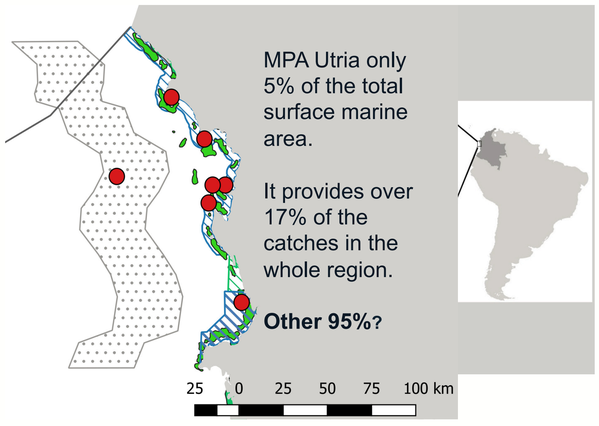
Introduction



- **High biodiversity**
- **Productive fisheries**
- **Migratory corridor**
- **Estuarine ecosystems**
- **Gap in data collection and taxonomic analysis**
- **Negatively affected by fisheries**

- **WHICH SHARK SPECIES ARE "BYCAUGHT" IN THE ÁREA?**
- **HOW ARE THEY DISTRIBUTED? (GENDER, AGE)**
- **HOW IS THE POPULATION GENETIC DIVERSITY?**

Material and Methods

DNA extraction, amplification and sequencing: NADH 2

Geneious: Sequence alignment and Blast

Summary statistics and Haplotype Network

Physical Examination: Length and sex

Results

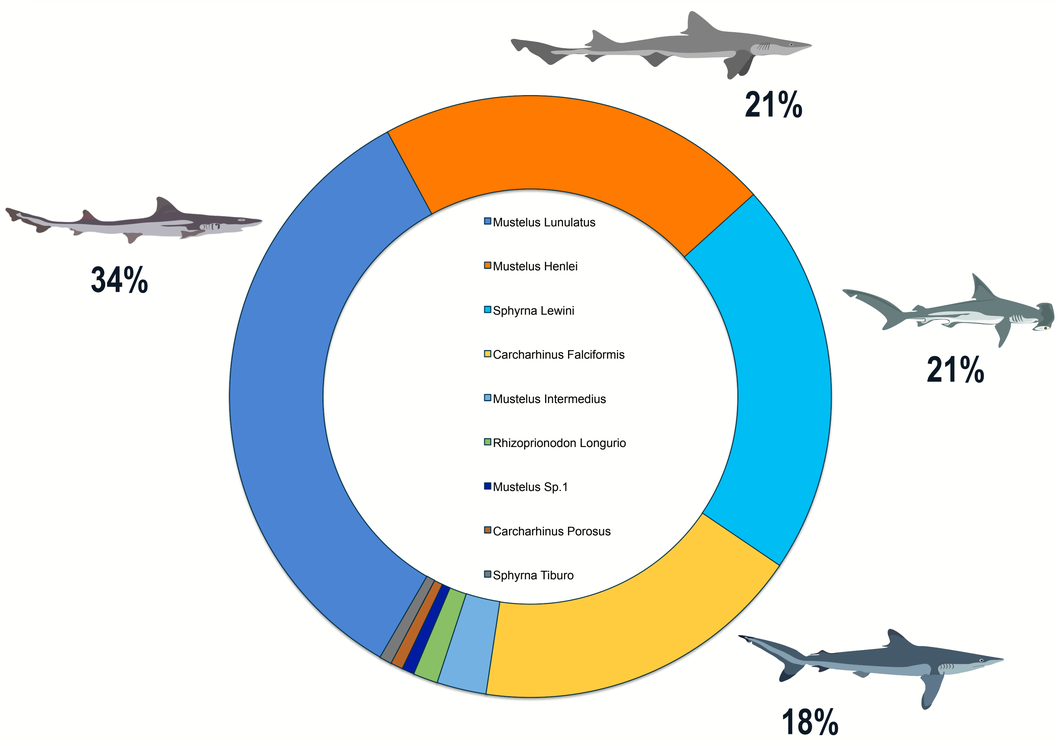
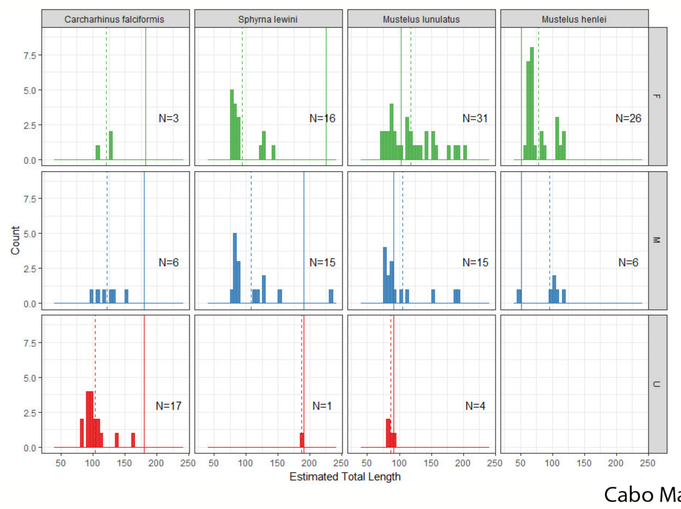


Fig.1. Species composition given as a proportion of the 200 sharks samples collected as by-catch from artisanal fisheries from landings during 2016 – 2017.



***S. lewini* and *C. falciformis* shark´s estimated length are under the minimum maturity size reported by the IUCN for Eastern pacific populations.**

Accumulative number of juveniles (regardless of the species) indicates the importance of the region as nursery grounds that overlaps with artisanal fishery areas.

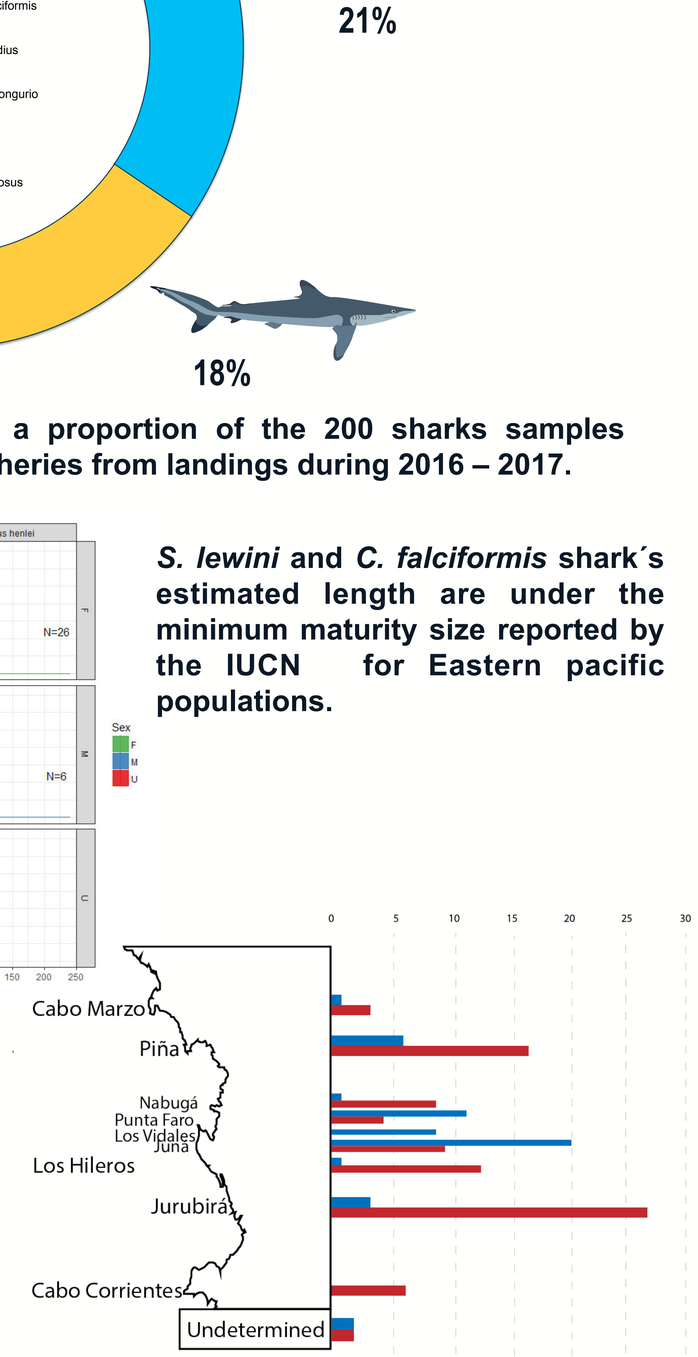
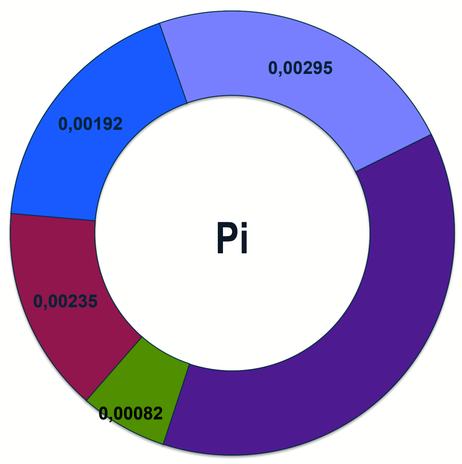
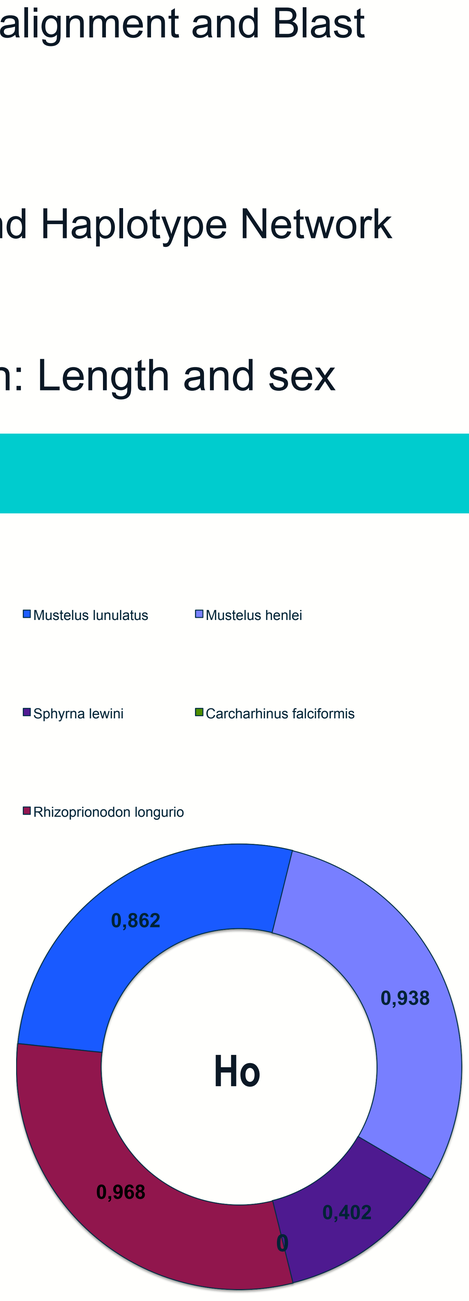


Fig.2. Size and gender structure in the four more abundant landed species (left) population structure per locality (juveniles – red/ adults – blue) (right)





In general low nucleotide diversity was found for all species. Two species of *Mustelus* presented high haplotype diversity as can also be observed in Fig 4.

Fig.3. Nucleotide diversity (Pi) and Haplotype diversity (Ho) of the 200 sharks samples collected as by-catch from artisanal fisheries from landings during 2016 - 2017

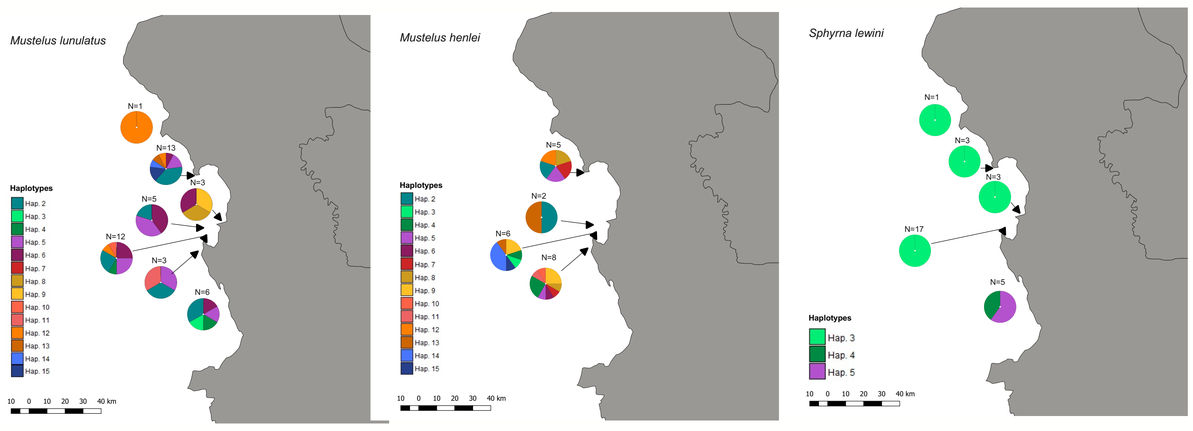


Fig.4. Haplotype distribution for *M. lunulatus, M. henlei* and *S. lewini* for the different fishing grounds in the Eastern Tropical Pacific.

Conclusions

Mustelus lunulatus and *henlei* showed high genetic diversity, despite being caught in great abundance in artisanal fisheries, being this an indicative of high resilient populations.

S. lewini and *C.falciformis* presented low genetic diversity showing higher vulnerability to fishing pressures.

This region could be considered as a potential nursery area due to the high abundance of juveniles of different species, but further analysis should be performed regarding residency and habitat use.

World Oceans Day