

Evaluating 12S eDNA Primers for Monitoring Coral Reef Fish in Aquarium Setting

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Introduction

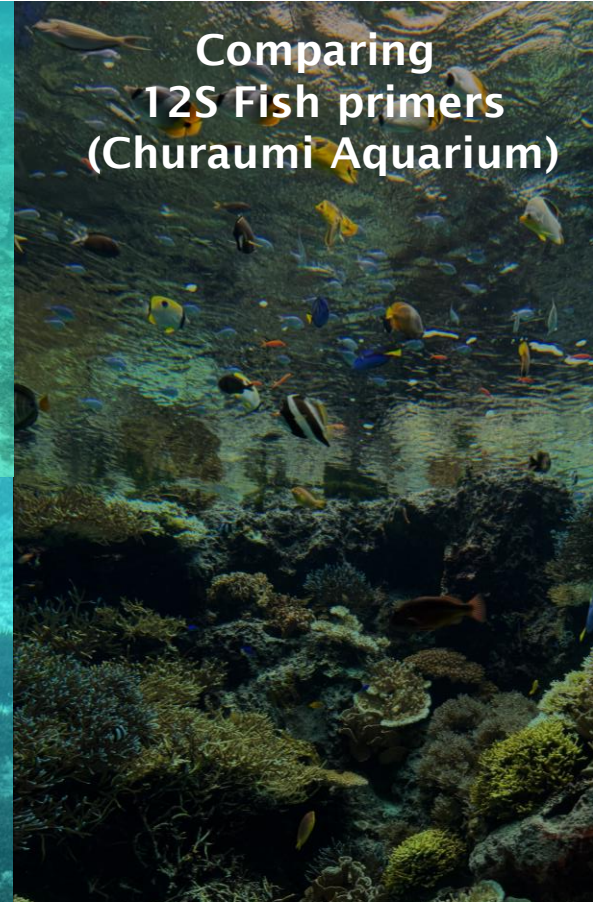
Subtropical Marine Biome



Pilot study to assess Coral Restoration sites



Comparing T2S Fish primers (Churaumi Aquarium)

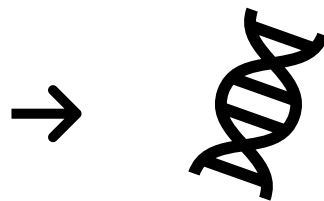
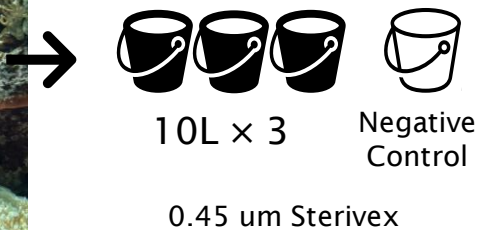
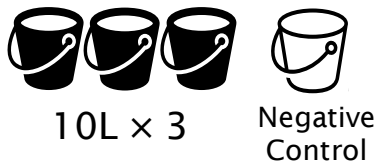




Method



300m offshore
Reef edge
Depth: 20m



12S mitochondrial primers

MiFish-U & Teleo

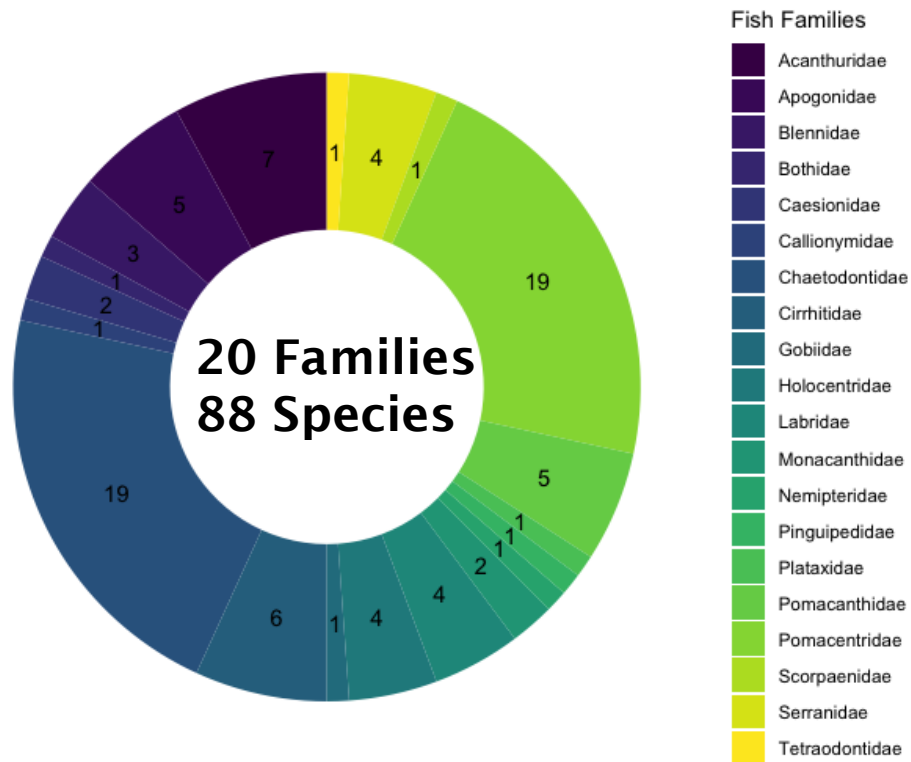
(Miya et al., [2015](#))
(Valentini et al., [2016](#))



Bioinformatics
Actinopterygii
12S seq extracted from
NCBI

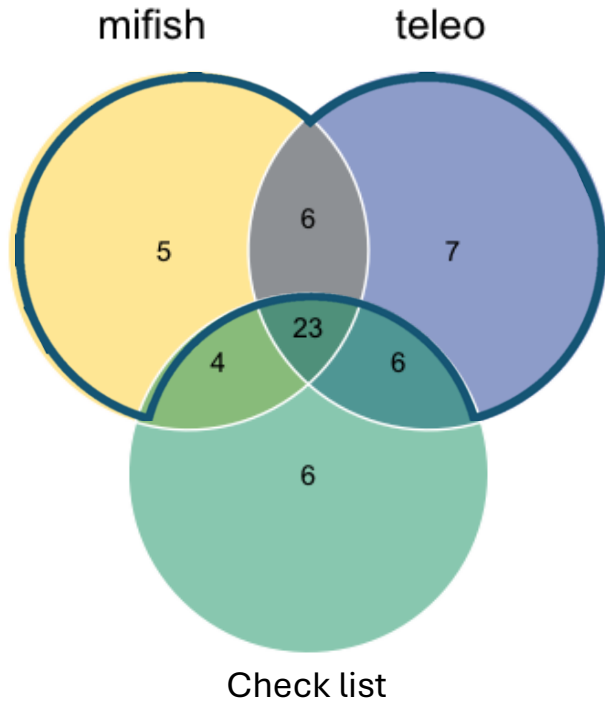


Result 48 out of 88 species missing in 12S reference database



Result

Unlisted Fish Species



Only in mifish

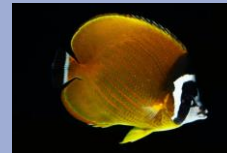


Sardinella marquesensis
Not found in Okinawa

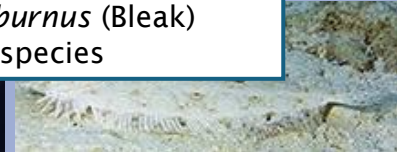
Both primers



Only in Teleo

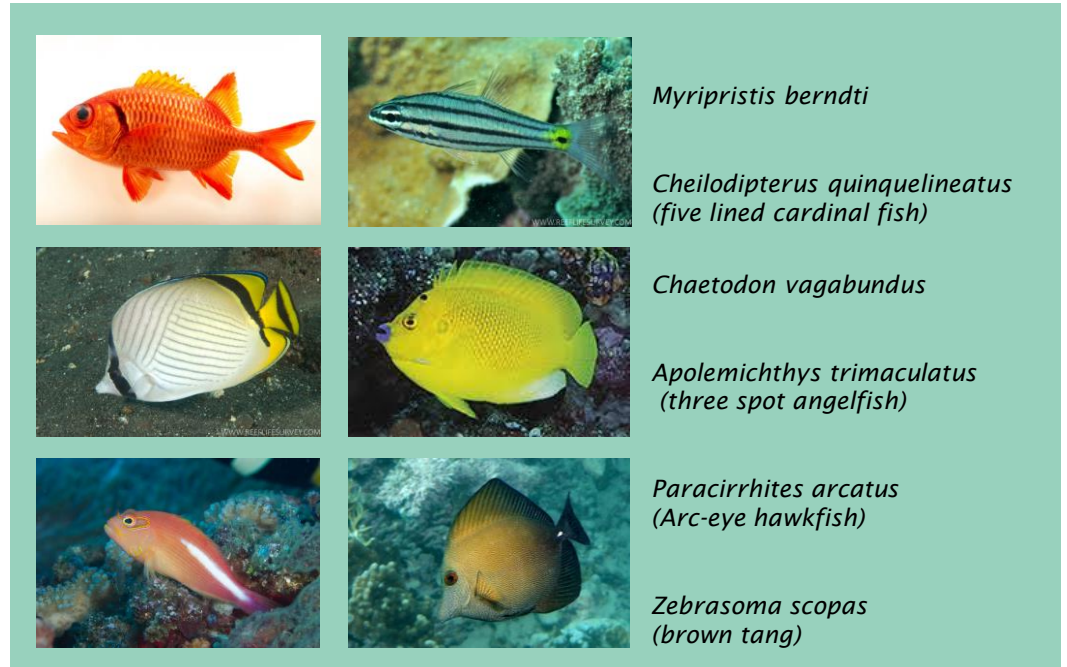
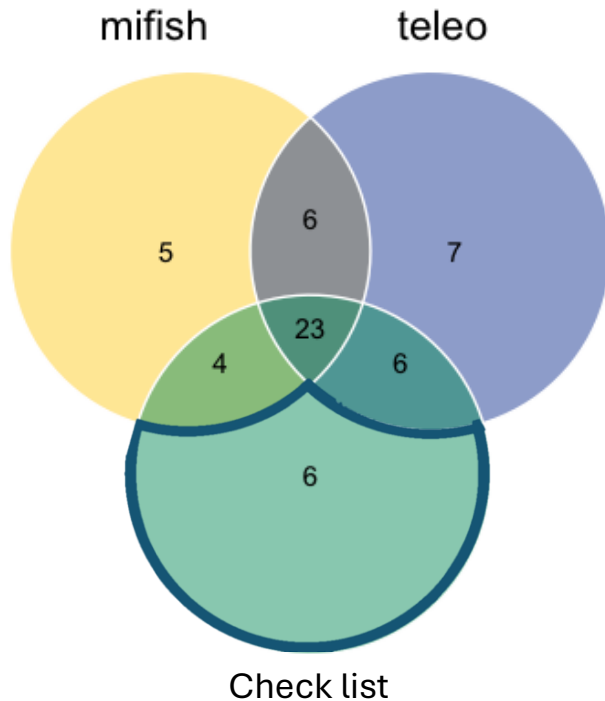


Alburnus alburnus (Bleak)
Fresh water species



Result

Species not detected



No clear patterns among non-detected species

Result

So, MiFish or Teleo?



Only in mifish



Only in Teleo



Using more primers increases the detection rate, but also raises the risk of false positives/contamination



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