The eDNA survey showed a relatively higher diversity of coral genera in the Kerama Islands to the Okinawa main island.

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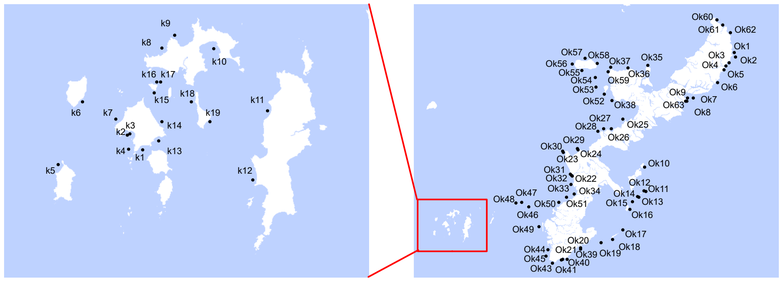
Research aim

- Corals are the most important animals in tropical marine ecosystems.
- Difficulty in taxonomic identification prevent large-scale descriptive surveys of corals.
- eDNA metabarcoding analyses enable objective distribution study of corals.
- We evaluate the generic diversity of corals in the Kerama and Okinawa reefs.

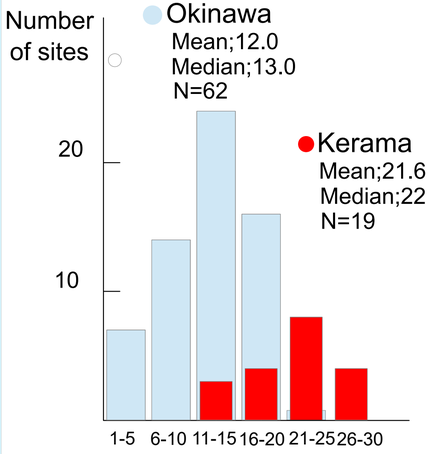
Survey sites



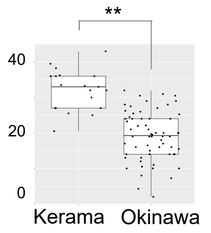
The Kerama Islands (19 reefs)

The Okinawa Islands (62 reefs)

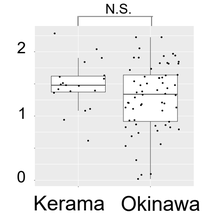
α diversity



Histogram of detected genera



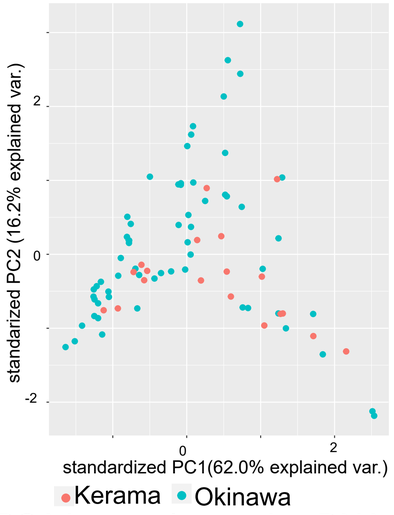
Chao1 Index



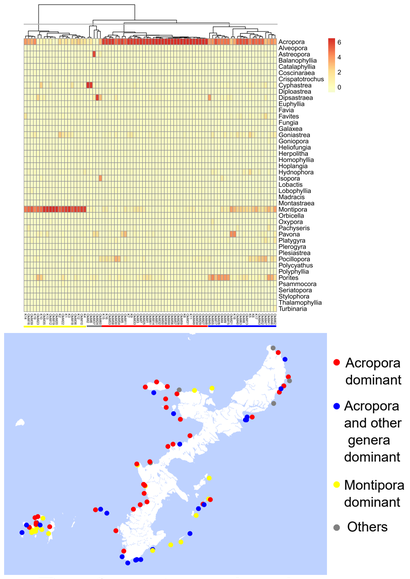
Shannon Index

- Detected genera and Chao1 index show α diversity of Kerama!

β diversity



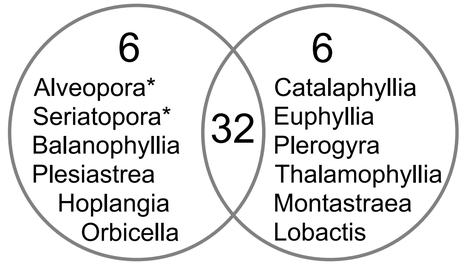
PCA by coral generic eDNA



Reefs categorized by clustering

- Keram reefs contain diverse coral genera compositions despite their relative small areas!

Detected genera



Venn diagram of detected genera

- Same numbers (38) of genera were detected!

Conclusion

- Kerama reefs are rich in α diversity.
- β and γ diversity of Kerama reefs are comparable to Okinawa despite the small areas.
- eDNA analyses are useful for large-scale evaluation surveys of coral genera diversity.