Replication of Figure 2: Time-varying interspecific interactions in a subset of the Maizuru fish community

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Ecological theory suggests that large-scale patterns such as community stability can be influenced by changes in interspecific interactions that arise from the behavioural and/or physiological responses of individual species varying over time. Although this theory has experimental support, evidence from natural ecosystems is lacking. Here, using tools for analysing nonlinear time series and a 12-year-long dataset of fortnightly collected observations on a natural marine fish community in Maizuru Bay, Japan, the show that short-term changes in interaction networks influence overall community dynamics. Figure 2 shows that interactions in the Maizuru Bay fish community are not static; this contradicts a common assumption of ecological research. Instead, they change over time, as expected for a system with nonlinear dynamics. Of the 14 interspecific interactions, on average 8 are negative and 6 are positive. …

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Keywords: Interaction networks; seasonal patterns; keyword 3

Highlights: These are the highlights.

# 1 Introduction

Here is a citation (Marwick, 2017)

# 2 Methods

Long-term time-series data of the fish community were obtained by underwater direct visual census conducted approximately once every two weeks along the coast of the Maizuru Fishery Research Station of Kyoto University (Nagahama, Maizuru: 35° 28′ N, 135° 22′ E) from 1 January 2002 to 2 April 2014 (285 time points during approximately 12 years). This high-frequency census enables the detection of short-term interspecific interactions.

## 2.1 Reproducibility

The data and code used in this analysis were packaged as a research compendium (R package rrtools) (**marwickPackagingDataAnalytical2018?**; **rrtools2019?**). The research compendium was written as an R package so other researchers can read, run, and modify the methods described here.

# 3 Results

## 3.1 Extract causality and interactions

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And here’s a cross-reference to figure 3.1.

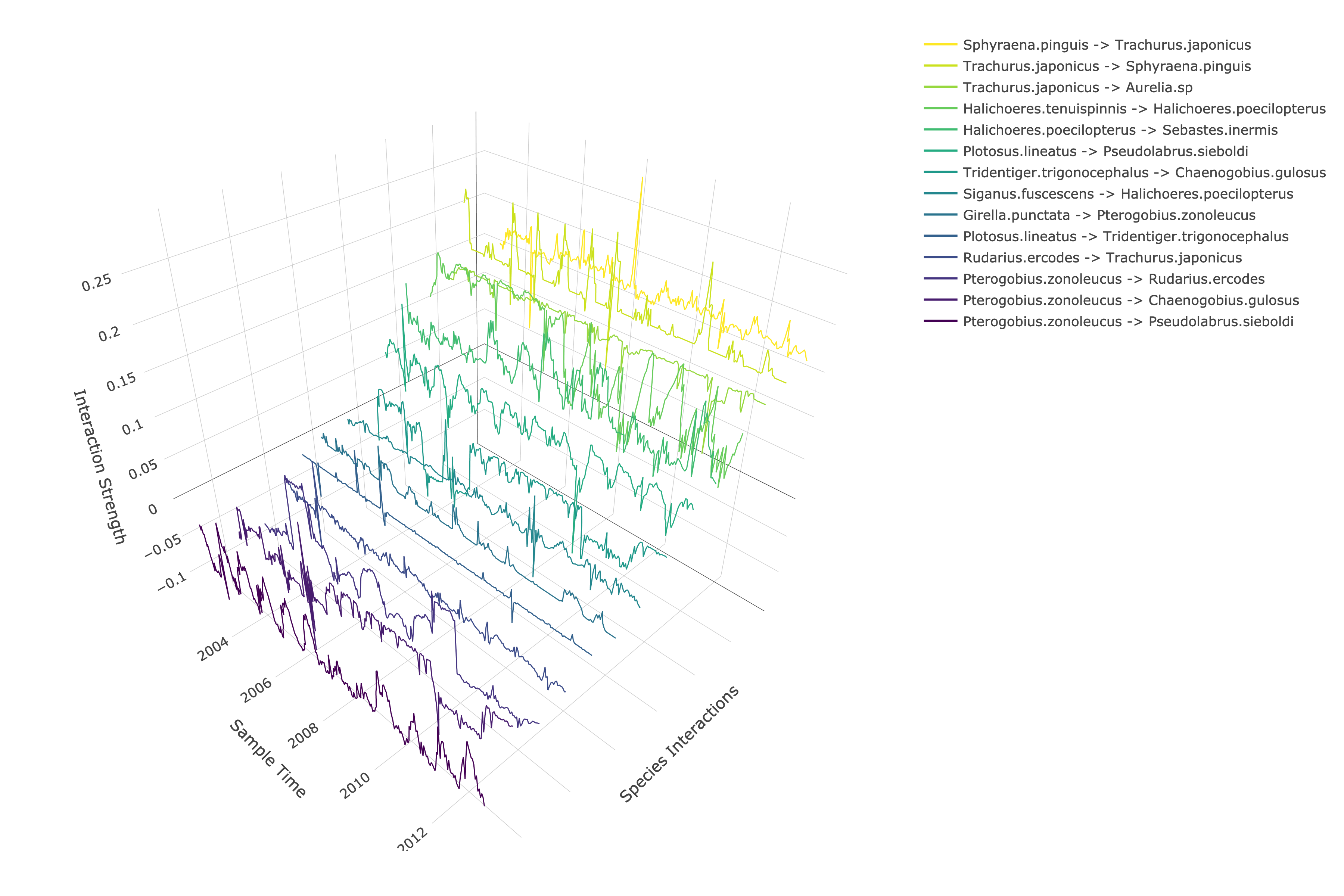


Figure 3.1: Fix this caption later

Figure ?? shows how we can have a caption and cross-reference for a plot

Here is an example of inline code 3.14 in the middle of a sentence.

# 4 Discussion

# 5 Conclusion

# 6 Acknowledgements

# 7 References

Marwick, B., 2017. Computational reproducibility in archaeological research: Basic principles and a case study of their implementation. Journal of Archaeological Method and Theory 24, 424–450. <https://doi.org/10.1007/s10816-015-9272-9>

### 7.0.1 Colophon

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#> Remote: main @ origin (https://github.com/ShirleyJenniferSerranoRojas/ushio2018)  
#> Head: [e784995] 2021-12-09: rsolved merged conflicts