

# Social Network Analysis

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## Packages

- **spatsoc** - <https://docs.ropensci.org/spatsoc/index.html> facilitates spatial social network analysis using animal telemetry data
- **aniSNA** - <https://www.biorxiv.org/content/10.1101/2024.05.10.593659v1.full> - additional functions for calculating uncertainty in social networks, and permuting networks to compare against a random social network
- **igraph** - <https://igraph.org/r/> - General package for making network graphs and calculating network metrics

## Tutorials and resources

#### **spatsoc package documentation and tutorials** - <https://docs.ropensci.org/spatsoc/index.html> - Robitaille, A. L., Webber, Q. M. R., & Vander Wal, E. (2019). **Conducting social network analysis with animal telemetry data: Applications and methods using spatsoc**. *Methods in Ecology and Evolution*, 10(8), 1203–1211. <https://doi.org/10.1111/2041-210x.13215>

## aniSNA package paper

- <https://www.biorxiv.org/content/10.1101/2024.05.10.593659v1.full>

## An introduction to social network analysis in R

- igraph package vignette - <https://cran.r-project.org/web/packages/igraph/vignettes/igraph.html>

## Useful papers

(Farine and Whitehead 2015) - Farine, D. R., & Whitehead, H. (2015). **Constructing, conducting and interpreting animal social network analysis**. *The Journal of Animal Ecology*, 84(5), 1144–1163. <https://doi.org/10.1111/1365-2656.12418>

(Kaur et al. 2024) - Kaur, P., Ciuti, S., Ossi, F., Cagnacci, F., Morellet, N., Loison, A., Atmeh, K., McLoughlin, P., Reinking, A. K., Beck, J. L., Ortega, A. C., Kauffman, M., Boyce, M. S., Haigh, A., David, A., Griffin, L. L., Conteddu, K., Faull, J., & Salter-Townshend, M. (2024). **A protocol for assessing bias and robustness of social network metrics using GPS based radio-telemetry data**. *Movement Ecology*, 12(1), 55. <https://doi.org/10.1186/s40462-024-00494-6>

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- Farine, Damien R, and Hal Whitehead. 2015. “Constructing, conducting and interpreting animal social network analysis.” *The Journal of Animal Ecology* 84 (September): 1144–63. <https://doi.org/10.1111/1365-2656.12418>.
- Kaur, Prabhleen, Simone Ciuti, Federico Ossi, Francesca Cagnacci, Nicolas Morellet, Anne Loison, Kamal Atmeh, et al. 2024. “A protocol for assessing bias and robustness of social network metrics using GPS based radio-telemetry data.” *Movement Ecology* 12 (August): 55. <https://doi.org/10.1186/s40462-024-00494-6>.