

ELECTRONIC APPENDIX

This is the Electronic Appendix to the article

Relatedness and helping in fish: examining the theoretical predictions

by

Kelly Stiver, Petra Dierkes, Michael Taborsky, H. Lisle Gibbs and Sigal Balshine

Proc. R. Soc. B ([doi:10.1098/rspb.2005.3123](https://doi.org/10.1098/rspb.2005.3123))

Electronic appendices are refereed with the text; however, no attempt is made to impose a uniform editorial style on the electronic appendices.

Relatedness and helping

Appendix 1. Helping effort and relatedness using all the available helper-breeder genetic dyad values and all recorded helper behavioural data. Here, some groups are represented by several helpers hence some breeders have contributed repeatedly to the helper–breeder relatedness scores.

variables		number of fish	test statistic	<i>P</i>
helper relatedness to breeding male	vs. helper relatedness to breeding female	<i>N</i> = 70	<i>t</i> = -2.8	0.006
helper relatedness to breeding male	vs. simulation average <i>r</i> = 0.5 (<i>N</i> = 1000)	<i>N</i> = 101	<i>t</i> = -19.5	< 0.0001
helper relatedness to breeding female	vs. simulation average <i>r</i> = 0.5 (<i>N</i> = 1000)	<i>N</i> = 110	<i>t</i> = -18.3	< 0.0001
average helper relatedness to both breeders	vs. total helping effort	<i>N</i> = 32	<i>Rho</i> = 0.021	0.91
helper relatedness to breeding male	vs. territory defense	<i>N</i> = 39	<i>Rho</i> = -0.34	0.03
helper relatedness to breeding female	vs. territory defense	<i>N</i> = 48	<i>Rho</i> = 0.23	0.12
helper relatedness to breeding male	vs. territory defense	<i>N_R</i> = 14 <i>N_U</i> = 25	<i>U</i> = 98.5	0.04
helper relatedness to breeding female	vs. territory defense	<i>N_R</i> = 24 <i>N_U</i> = 24	<i>U</i> = 189.5	0.04
helper relatedness to breeding female	vs. helper relatedness to breeding male	<i>N</i> = 70	<i>R</i> ² = 0.046 <i>Z</i> = 1.78	0.07