### Carly D. Kenkel, Albert T. Almanza & Mihkail V. Matz. 2015. Fine-scale environmental specialization of reef-building corals might be limiting reef recovery in the Florida Keys. *Ecology*

### Supplement 1:

### Raw data in comma-separated format and R code for statistical models and figures.

### Author(s)

Carly D. Kenkel
Australian Institute of Marine Science
PMB No. 3
Townsville MC, Queensland 4810
Australia
email: carly.kenkel@gmail.com

Albert T. Almanza
The University of Texas at Austin
1 University Station C0990
Austin, TX 78712
USA
email: albert.almanza@utexas.edu

Mikhail V. Matz
The University of Texas at Austin
1 University Station C0990
Austin, TX 78712
USA
email: matz@utexas.edu

### File list

Analyses\_final.r

AllDataCSV.csv

FloridaKeys&ShelfWQ\_in uM\_TargetSitesAllYears.csv

FloridaKeys&ShelfWQ\_uM\_WholeDataset.csv

Keys4wayReplicatesSERCdata.csv

LowTempLogger.csv

MeanEnvDataAnalysis.csv

MidTempLogger\_MatchToLowKeys.csv

TradeoffsGrid.csv

**Description**

Analyses\_final.r contains R code to conduct linear mixed models, evaluate model selection and generate Wald test statistics, in addition to generating results figures and analyses of water quality data as described in the associated publication. Comment lines specify additional instructions within the script.

AllDataCSV.csv contain the raw physiological trait data (i.e. weight gain, total protein, total carbohydrate, *Symbiodinium* density, etc.) for each coral collected from each reef site in comma-separated format as described in the associated publication. This can be used as an input file for the Analyses\_final.r script.

FloridaKeys&ShelfWQ\_in uM\_TargetSitesAllYears.csv contains raw environmental data sourced from the Southeast Environmental Research Center, Florida International University (SERC-FIU) Water Quality Monitoring Project for the Water Quality Protection Program of the Florida Keys National Marine Sanctuary which is supported by EPA Agreement #X994621-94-0 and NOAA Agreement #NA09NOS4260253. This data is in comma-separated format and can be used as an input file for the Analyses\_final.r script.

FloridaKeys&ShelfWQ\_uM\_WholeDataset.csv contains raw environmental data sourced from the Southeast Environmental Research Center, Florida International University (SERC-FIU) Water Quality Monitoring Project for the Water Quality Protection Program of the Florida Keys National Marine Sanctuary which is supported by EPA Agreement #X994621-94-0 and NOAA Agreement #NA09NOS4260253. This data is in comma-separated format and can be used as an input file for the Analyses\_final.r script.

Keys4wayReplicatesSERCdata.csv contains raw environmental data water quality data from the Lower Florida Keys and was extracted from the SERC-FIU dataset to create two series of non-overlapping four-site groups (N=4 four-site groups per series) replicating the transplant design as shown in Figure 1 of the associated publication. Series A corresponds to the following sets of monitoring stations, listed in order of “in”, “off”, “in-nov”, “off-nov”: (274, 276, 271, 273) ; (268, 270, 266, 267) ; (260, 263, 257, 259) ; (254, 256, 250, 252) while series B corresponds to (277, 279, 274, 276) ; (271, 273, 268, 270) ; (266, 267, 260, 263) ; (257, 259, 254, 256) (http://serc.fiu.edu/wqmnetwork/FKNMS-CD/lowkeys.htm). This data is in comma-separated format and can be used as an input file for the Analyses\_final.r script.

MeanEnvDataAnalysis.csv contains means of environmental data water quality data from the Lower and Middle Florida Keys and was generated from the SERC-FIU dataset. This data is in comma-separated format and can be used as an input file for the Analyses\_final.r script.

LowTempLogger.csv contains raw temperature logger data from the four sites in the Lower Florida Keys as described in the associated publication. This data is in comma-separated format and can be used as an input file for the Analyses\_final.r script.

MidTempLogger\_MatchToLowKeys.csv contains raw temperature logger data from the four sites in the Middle Florida Keys as described in the associated publication. This data is in comma-separated format and can be used as an input file for the Analyses\_final.r script.

TradeoffsGrid.csv contains calculations of the magnitude of fitness trade-offs, as quantified by percent weight gain. It describes the correlation between the fitness advantage of a focal population at its native reef site (relative fitness in the native environment, i.e. “home”) and the fitness advantage of the population at a non-native site (relative fitness in the non-native environment, i.e. “cross-channel” and “along-shore”).. This data is in comma-separated format and can be used as an input file for the Analyses\_final.r script.