Case Study Statistical Consulting

Fine-scale behavioural adaptations of prey on a continuum of risk

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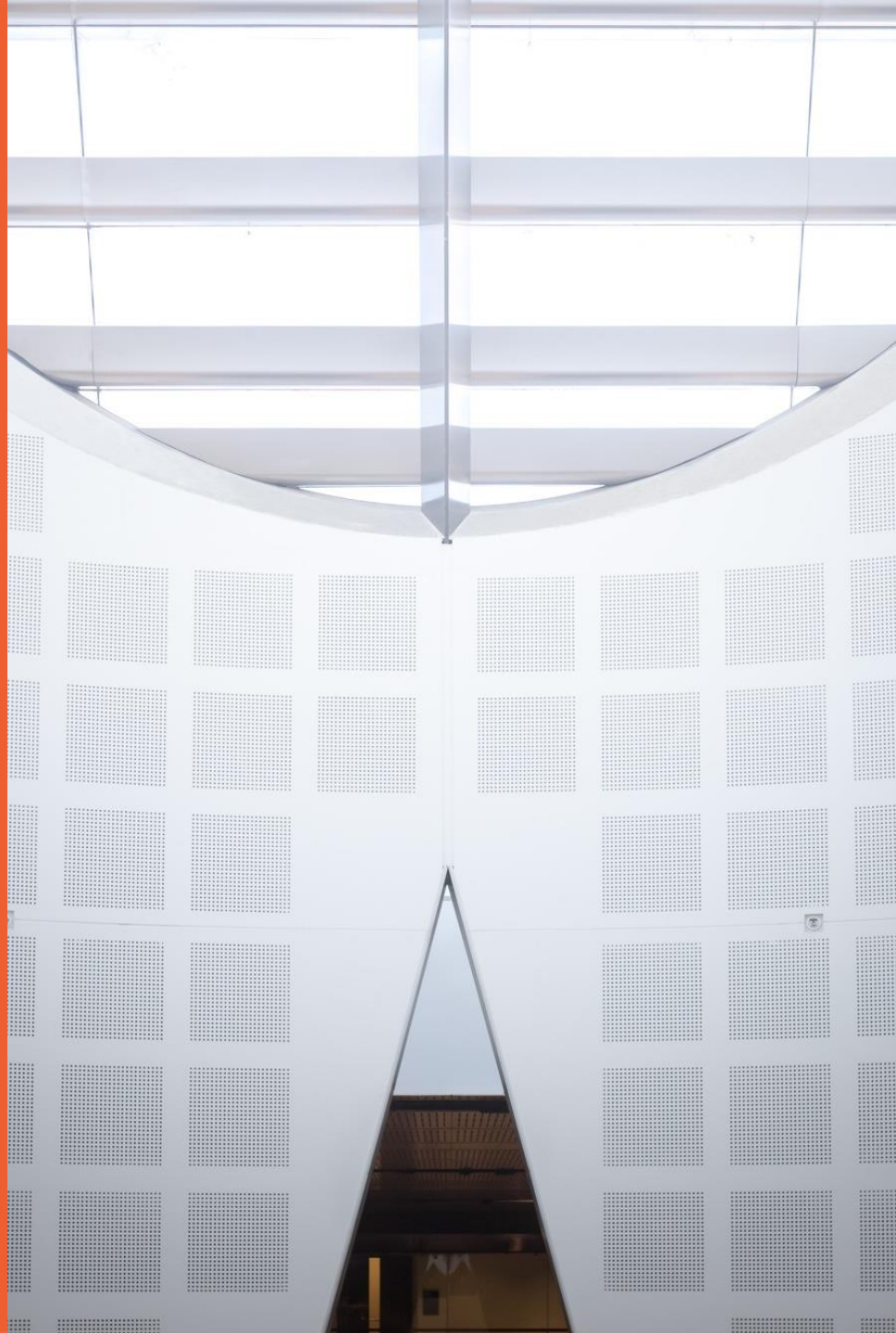

Research Question

- How do prey fish (Eastern Mosquitofish) respond to an attacking predator (Jade Perch)
- This was an an analysis on video tracking data to quantitatively map action and response between ~200 fish.

How Statistical Consulting Contributed

General discussion and advice on issues such as:

- Robust quantitative delineation between active and inactive predator states
- Suitable descriptive statistics and visualisation to best show the insight in the data
- Applicability and validity of statistical tests

Advice and R code for:

- Manipulating large data sets in R and Matlab
- Designing and coding informative visualisations

Student Quote

"When I consulted with Dr. McDonald from the university's statistical consulting service, I was impressed by the level of service I received. In addition to our initial 3-hour meeting in which we discussed different ways to approach my analysis, Dr. McDonald continued to help by writing R scripts and editing Matlab code. His statistical and analytical help elevated the quality of the manuscript and was pivotal to the publication of my research."

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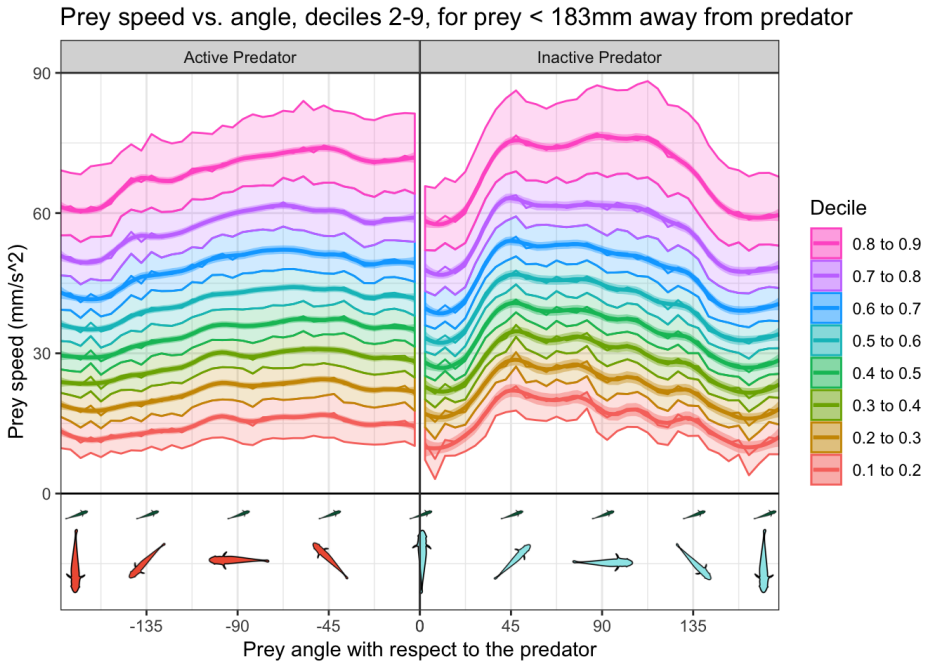
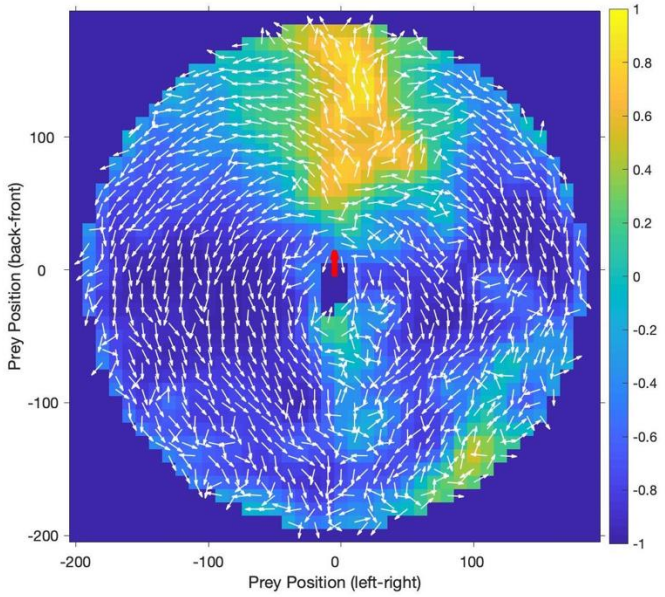
Publications

"Fine-scale behavioural adaptations of prey on a continuum of risk" (Submitted to Proceedings of the Royal Society B)





Left: Deciles of prey speed vs. angle relative to predator. Right: Flow diagram of prey escaping an active predator, averaged over all recorded predator-prey interactions.

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