

Samuel Thompson

PHD RESEARCHER

School of Biological Sciences, University of Western Australia

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About me

I use novel sampling methods, computers and large data sets to answer biological questions, typically in marine vertebrates. My research has focused on the development and deployment of a novel sampler capable of simultaneously collecting environmental DNA (eDNA), stereo-video imagery and oceanographic data, along with the development of a new family-specific eDNA metabarcoding primer set targeting Lutjanidae (Snapper). I investigate the spatial distribution of marine vertebrate species in the context of anthropogenic change; especially the presence of restricted-access marine areas such as Marine Parks and offshore infrastructure.

Education

University of Western Australia

Perth, Australia

PHD

2020-present

- eDNA metabarcoding PhD with the Marine Ecology Fisheries Research Group and the Jarman lab
- Developed a sampling system capable of collecting 360-degree stereo-video, water samples and oceanographic data at depths up to 600m
- Designed a family-specific metabarcoding primer set for Lutjanidae (snapper)
- Worked extensively with industry (BHP)

University of Southampton

Southampton, United Kingdom

MASTER OF OCEANOGRAPHY

2017-2018

- Studied all forms of oceanography with a focus on biological oceanography and deep-sea ecology
- In my research project I worked on characterising deep-sea megafauna of the Kiribati region using a towed camera system (published in Frontiers in Marine Science 2019)

University of Kent

Kent, United Kingdom

BACHELOR OF BIOCHEMISTRY (WITH HONOURS)

2010-2014

- Studied general life sciences with a focus on microbiology/genetics
- In my final project I worked on genome duplication events in the marine chordate Amphioxus

Employment

Minderoo

Perth

RESEARCH ASSISTANT (PART-TIME)

2017-present

- Research assistant with the Minderoo OceanOmics team during offshore expeditions
- Working onboard the Pangaia Ocean Explorer, conducting eDNA sampling, extraction, amplification, purification and sequencing
- Opportunity to undertake knowledge transfer of eDNA techniques to traditional ranger groups
- Has provided me with a unique opportunity to conduct end-to-end sampling to sequencing on an offshore vessel

University of Western Australia

Perth

LABORATORY DEMONSTRATOR (PART-TIME)

2021-present

- BIOL1131: Plant and Animal Biology
- Laboratory demonstrator and tutor for both face-to-face and online delivery formats
- Marker for marine component
- Guest Lecturer: Amphioxus: A model for developmental biology

RPS MetOcean

Perth

OCEANOGRAPHER

2019-2019

- Working in the data resources department
- Work processing, QCing and interpreting large oceanographic datasets through a linux environment and the command line
- Data from instruments including: ADCPs, CTDs, LIDAR buoys, Wave rider buoys

Royal Perth Yacht Club

Perth

WINDSURFING AND SAILING INSTRUCTOR (PART-TIME)

2019-2020

- Working as a dual qualified windsurfing and sailing instructor at a prestigious Perth yacht club
- Delivering both practical and theoretical lessons to groups of all ages and abilities ranging from age 8 up to 70

Mylan

Kent, United Kingdom

ANALYTICAL CHEMIST

2015-2017

- Key R&D team member during the ANDA submission to the FDA for a generic Advair drug product. Conducted inhalation-specific lab techniques including aerodynamic particle size distribution, dissolution and emitted dose testing. Use, calibration, maintenance and troubleshooting of analytical chemistry instrumentation including HPLC and Raman spectrometers. Worked abroad in Dublin training new staff and setting up equipment in a new, purpose built QC lab for Mylan's European inhalation manufacturing facility

Other Skills

Coding languages

BASH, R, HTML, PYTHON

- Shell scripting; building and running pipelines for processing large bioinformatic and oceanographic datasets via command-line
- Highly proficient with the configuration and operation of both native and virtual Linux environments (WSL2)
- Familiar with wide variety of R packages, especially for ecological statistics and spatial analysis
- Highly familiar with version control systems: Git and Docker
- Have my own hardcoded website written in HTML and styled using CSS

Practical Skills

ELECTRICAL, MECHANICAL, WOODWORK, ROPEWORK, BOATWORK

- Highly proficient at building and troubleshooting 12v automotive and marine systems
- Highly proficient at troubleshooting software/hardware related PC issues; I have built multiple desktop PCs and completed many initial OS installs and setups using various windows and linux distributions
- Intermediate mechanical knowledge; especially 4x4 and diesel automotive systems
- Basic carpentry and joinery skills from building multiple campervans
- Basic ropework / winch skills
- I have participated >1000 deployments of various marine sampling equipment on a variety of vessel types from the Southampton Solent to the Southern Ocean

Licenses & certifications

Advanced resuscitation

OXYGEN PROVIDER AND CPR

PADI

2022-2023

First Aid

PADI

2021-2024

4WD training

RIIVEH201D: OPERATE LIGHT VEHICLE, TLIC1051: OPERATE COMMERCIAL VEHICLE, TLIC2025: OPERATE FOUR WHEEL DRIVE VEHICLE, TLIF2010: APPLY FATIGUE MANAGEMENT STRATEGIES, RIIVEH305E: DRIVE AND RECOVER A FOUR WHEEL DRIVE VEHICLE, PMASUP236: OPERATE VEHICLES IN THE FIELD

2020

Recreational skippers ticket

DOT

2020

Advanced Open Water Diver

PADI

2017

Dinghy sailing instructor

RYA

2014

Safety boat

RYA

2013

Powerboat level 2

RYA

2012

Start windsurfing instructor

RYA

2012

Scientific voyages

Fremantle -> Abrolhos Islands -> Fremantle

RESEARCH ASSISTANT - MINDEROO OCEANOICS

Pangaea Ocean Explorer

2023 (10 days)

Esperance -> Albany

RESEARCH ASSISTANT - MINDEROO OCEANOmICS

Immortalis

2023 (10 days)

Fremantle -> Cocos Keeling Islands

RESEARCH ASSISTANT - MINDEROO OCEANOmICS

Pangaea Ocean Explorer

2022 (22 days)

Carnarvon -> Ningaloo Marine Park

RESEARCH LEAD - UWA MARINE ECOLOGY GROUP. SURVEYING PALEOCOASTLINE FEATURES WITH STEREO-BRUVs, NOVEL SAMPLERS, CTDs AND ENVIRONMENTAL DNA

Keshi Mer

2022 (12 days)

Fremantle -> Abrolhos Islands -> Fremantle

RESEARCH ASSISTANT - MINDEROO OCEANOmICS

Pangaea Ocean Explorer

2022 (10 days)

Esperance -> Israelite bay -> Fremantle

RESEARCH ASSISTANT - MINDEROO OCEANOmICS

Pangaea Ocean Explorer

2022 (14 days)

Coral Bay -> Exmouth Gulf

RESEARCH ASSISTANT - MINDEROO OCEANOmICS

Pangaea Ocean Explorer

2021 (10 days)

Dongara -> Onslow, WA

PHD STUDENT - UWA MARINE ECOLOGY GROUP. SURVEYING MARINE PARKS, PROPOSED PARK ZONES AND OFFSHORE OIL AND GAS INFRASTRUCTURE USING STEREO-BRUVs, NOVEL SAMPLERS, CTDs AND ENVIRONMENTAL DNA

Adrianus

2021 (28 days)

Presentations

Simultaneous eDNA and visual surveying of the marine environment

ECR PRESENTER

Australia and New Zealand eDNA conference

2023

Amphioxus: A model for developmental biology

GUEST LECTURER

UWA - BIOL1131: Plant and Animal Biology

2021

Research update

STUDENT PRESENTER

UWA - School of biological sciences postgraduate retreat

2021

Research proposal

PHD RESEARCH PROPOSAL

UWA- School of Biological sciences Friday seminar series

2020

Awards and Funding

Grant: Biodiversity and societal benefits of restricted access marine areas

WITH PROF. JULIAN PARTRIDGE, PROF. SIMON JARMAN, PROF. GARY KENDRICK, DR. TIM LANGLOIS, DR MATT NAVARRO. TOTAL FUNDING: AUD \$666,524.

BHP/UWA

2020-2024

Award: CSIRO Early-career researcher conference bursary

GRANT TO ATTEND THE 2023 AUSTRALIA AND NEW ZEALAND EDNA CONFERENCE IN HOBART. TOTAL FUNDING: AUD \$600

CSIRO

2023

Publications

Preliminary observations of the abyssal megafauna of Kiribati

E SIMON-LLEDÓ, S THOMPSON, A YOOL, A FLYNN, C POMEE, J PARIANOS, ...

Frontiers in Marine Science

2019