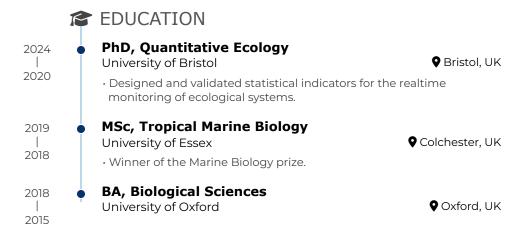
DUNCAN O'BRIEN

I am a quantitative ecologist interested in the resilience of ecosystems, and how effective management can ensure their functioning. I have explored this question both theoretically through my research and practically during my employment. This experience has allowed me to protect vulnerable ecosystems and successfully create new habitats.



RESEARCH EMPLOYMENT

Current 2024

Research Associate

University of Bristol

Pristol UK

- · Analysis of seabird populations using trait-based approaches.
- · Coordinated an international team of ecologists and theoreticians to generate peer reviewed publications and open-source software.

2018

Research Technician

Smithsonian Institute

• Eleuthera, The Bahamas

· Maintained and monitored a seagrass experiment as a member of the Thalassia Experimental Network (https://global.si.edu/projects /thalassia-experimental-network-ten).



PFFR-REVIEWED PUBLICATIONS

2024

Herbivore effects increase with latitude across the extent of a foundational seagrass

Nature Ecology & Evolution

· Campbell, J. E., Rhoades, O, K., Munson, C. J., et al., https://doi.org/10 .1038/s41559-024-02336-5

2023

Resilience metrics are robust across data qualities but sensitive to community size

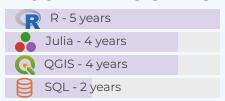
Under Review

· O'Brien, D. A. & Clements, C.F., https://doi.org/10.1101/2023.09.25.559298

CONTACT

- ✓ duncan.a.obrien@gmail.com
- in linkedin.com/duncanobrien
- github.com/duncanobrien
- **G** scholar.google.com

PROGRAMMING SKILLS



Evidence: github.com/duncanobrien

RELEVANT SKILLS

∠ Biodiversity metrics

Expertise designing indicators and testing their reliability across data aualities

Evidence: PhD

Communication

Provided press releases, user guides, and public talks

Evidence: OUTREACH & CONFERENCES

Evidence & analysis

Delivered peer reviewed software and iournal articles

Evidence: PUBLICATIONS

■ Habitat assessment

Successfully protected vulnerable ecosystems

Evidence: MSc & Research Technician

Programming

Maintain a R package on CRAN with unit tests and documentation

Evidence: EWSmethods



Delivered modelling analyses with reproducible workflows

Evidence: O'Brien et al. 2023a; Besson et al. 2023

2023 • Early warning signals have limited applicability to empirical lake data.

Nature Communications

- O'Brien, D. A., Deb, S., Gal, G., Thackeray, S.J., Dutta, P.S., Matsuzaki, S-i.S., May, L. & Clements, C.F., https://doi.org/10.1038/s41467-023-43744-8
- · Winner of a Poster Prize at the British Ecological Society Annual Meeting 2022.
- Phenotypic response to different predator strategies can be mediated by temperature

Ecology and Evolution

- · Cerini, F., O'Brien, D. A., Wolfe, E., Besson, M.& Clements, C.F., 13, e10474. https://doi.org/10.1002/ece3.10474
- **EWSmethods: an R package to forecast tipping points at the community level using early warning signals, resilience measures and machine learning models**Ecography
 - <u>O'Brien, D. A.</u>, Deb, S., Sidheekh, S., Krishnan, N.C., Dutta, P.S. & Clements, C.F., e06674. https://doi.org/10.1111/ecoq.06674
 - Tutorials available at https://duncanobrien.github.io/EWSmethods/.
- Seagrass abundance predicts surficial soil organic carbon stocks across the range of Thalassia testudinum in the Western North Atlantic

Estuaries and Coasts

- Fourquean, J. W., Rhoades, O, K., Munson, C. J., <u>et al.</u>, 46, 1280–1301. https://doi.org/10.1007/s12237-023-01210 -0
- Spatiotemporal thermal variation drives diversity trends in experimental landscapes

 Journal of Animal Ecology
 - Wolfe, E., Cerini, F., Besson, M., <u>O'Brien, D. A.</u> & Clements, C.F., 92, 2, 430-441. https://doi.org/10.1111/1365-2656
- Anemone bleaching impacts the larval recruitment success of an anemoneassociated fish

Coral Reefs

- Besson, M., Feeney, W.E., Gache, C., <u>O'Brien, D. A.</u>, Berthe, C., Cowan, Z., Brooker, R.M, Laudet, V. & Lecchini, D., 42, 1, 195-203. https://doi.org/10.1007/s00338-022-02323-x
- Planktonic functional diversity changes in synchrony with lake ecosystem state
 Global Change Biology
 - <u>O'Brien, D. A.</u>, Gal, G., Thackeray, S.J., Matsuzaki, S-i.S., & Clements, C.F., 29, 3, 686–701. https://doi.org/10.1111/qcb.16485
- Nocturnal surveys of lined seahorses reveal increased densities and seasonal recruitment patterns

Ecology and Evolution

- · Masonjones, H.D., Rose, E., Gonzalez, J.E. & O'Brien, D. A., 13, 1, e9573. https://doi.org/10.1002/ece3.9573
- Early warning signal reliability varies with COVID-19 waves
 Biology Letters
 - · O'Brien, D. A. & Clements, C.F., 17, 12, 20210487. http://doi.org/10.1098/rsbl.2021.0487
- Nocturnal surveys reveal novel insights into the community dynamics of an anchialine ecosystem from The Bahamas

Estuarine, Coastal and Shelf Science

• <u>O'Brien, D. A.</u>, Masonjones, H.D., Bethel, E. & O'Shea, O.R., 262, 107588. http://doi.org/10.1016/j.ecss.2021 .107588

An experimental assessment of social tolerance and den ecology in a high-density octopus population

Marine Biology

• <u>O'Brien, D. A.</u>, Taylor, M.L., Masonjones, H.D., Boersch-Supan, P.H. & O'Shea, O.R., 168, 61. https://doi.org/10 .1007/s00227-021-03865-4

Evidence and description of a nursery habitat for the recently reclassified stingray Styracura schmardae from The Bahamas

Marine Ecology Progress Series

· O'Shea, O.R, Van Leeuwen, T.E., <u>O'Brien, D. A.</u>, Arrowsmith, L., McCalman, R., Griffiths, M. & Exton, D.A., 660, 141-151. https://doi.org/10.3354/meps13589

Drivers of octopus abundance and density in an anchialine lake: A 30 year comparison

Journal of Experimental Marine Biology

<u>O'Brien, D. A.</u>, Taylor, M.L., Masonjones, H.D., Boersch-Supan, P.H. & O'Shea, O.R., 528, 151377. https://doi.org/10.1016/j.jembe.2020.151377



2022

2019

2018

2020

2012

Research Without Borders - working together to tackle the climate crisis

Cabot Institute

♥ Bristol, UK

• With an interdisciplinary team of Bristol PhD students, I hosted a public event on the current research Bristol is facilitating to tackle the climate crisis https://www.bristol.ac.uk/doctoral-college⁷.

Consultation on the fate of Seahorse National Park

CORE Sciences

© Eleuthera, The Bahamas

- Presented evidence to the Bahamas National Trust with the local Eleutheran community regarding the ecological importance of a large anchialine lake and surrounding mangrove.
- This environmental impact assessment contributed to the protection of this system under the title Seahorse National Park https://bnt.bs/news².

2019 **Marine Science Summer Program**

CORE Sciences

♥ Eleuthera, The Bahamas

• Designed and taught week long introductions to marine habitats for local Bahamian children (8 -15 years old)

TEACHING EXPERIENCE

Current **Demonstrator**

University of Bristol

♥ Bristol, UK

• Taught and assessed undergraduate learning across multiple subjects including: statistics, bioinformatics, behavioural ecology, and evolution.

2020 💧 Swimming teacher

· Employed on a part time basis to teach beginner through competitive swimming.

· Honed targeted and educational communication/terminology whilst working with both young and older swimmers.

• Eleuthera, The Bahamas **CORE Sciences** 2018 · Devised and taught a two-week introductory field course for university undergraduates focussing on marine sampling techniques and preliminary data analysis in R and Excel. **†**CONFERENCES **Cabot Institute World Water Day** 2023 Pristol, UK Poster · Identifying regime shifts using early warning signals: the univariate and multivariate options. **British Ecological Society annual meeting** 2022 **♀** Edinburgh, UK · Identifying regime shifts using early warning signals: the univariate and multivariate options. · Prize winner. **International Center for Theoretical Sciences** 2022 Pangalore, India Poster · Planktonic functional diversity changes in synchrony with ecosystem state. **British Ecological Society annual meeting** 2021 **♀** Liverpool, UK Presentation · Planktonic functional diversity changes in synchrony with ecosystem state. **Bahamas National History conference** 2020 Nassau, The Bahamas Presentation

· Octopus abundance in an anchialine lake from The Bahamas.

Instructor

2019