

# Robert Schlegel

Research Engineer



## Profile

Marine Scientist specialising in R, marine heatwaves (MHW), coastal ecology (kelp), species distribution modelling (SDM), and a wide range of additional skills, training, and experience.

*Key strengths: Proactive, self-motivated, resourceful, creative problem solver, attention to detail*

## Education

<u>Date</u>	<u>Qualification</u>	<u>Institution</u>
Jan '15 – Mar '18	PhD – Biodiversity	Univ. of the Western Cape
Jan '13 – Jan '14	MPhil – Applied Marine Science	University of Cape Town
Sep '04 – Mar '08	Bachelor of Arts – Psychology	University of Washington
Sep '00 – Jun '04	Diploma	Woodinville High School

## Thesis Titles

**Bachelor Thesis:** Effect of abnormally small troop size on aggressive and prosocial behavior in patas monkeys, *Erythrocebus patas*

**Master Thesis:** The effects of the Cold Ridge variability on small pelagic transition and retention from the West coast to the South coast of South Africa

**PhD Thesis:** Coastal marine heatwaves: Understanding extreme forces

## Highlighted Publications

- Schlegel, R., Bartsch, I., Bischof, K., Bjørst, L. R., Dannevig, H., Diehl, N., ... & Gattuso, J. P. (2023). Drivers of Change in Arctic Fjord Socio-ecological Systems: Examples from the European Arctic. *Cambridge Prisms: Coastal Futures*, 1-49. doi:10.1017/cft.2023.1
- Garrabou, J., Gómez-Gras, D., Medrano, A., Cerrano, C., Ponti, M., Schlegel, R., ... & Harmelin, J. G. (2022). Marine heatwaves drive recurrent mass mortalities in the Mediterranean Sea. *Global Change Biology*, 28(19), 5708-5725. doi:10.1111/gcb.16301
- Schlegel, R. W., Darmaraki, S., Benthuyesen, J. A., Filbee-Dexter, K., & Oliver, E. C. (2021). Marine cold-spells. *Progress in Oceanography*, 102684. doi:10.1016/j.pocean.2021.102684
- Oliver, E. C., Benthuyesen, J. A., Darmaraki, S., Donat, M. G., Hobday, A. J., Holbrook, N. J., ... & Sen Gupta, A. (2021). Marine heatwaves. *Annual Review of Marine Science*, 13, 313-342. doi:10.1146/annurev-marine-032720-095144
- Goldsmith, J., Schlegel, R. W., Filbee-Dexter, K., MacGregor, K. A., Johnson, L. E., Mundy, C. J., ... & Archambault, P. (2021). Kelp in the Eastern Canadian Arctic: current and future predictions of habitat suitability and cover. *Frontiers in Marine Science*. doi:10.3389/fmars.2021.742209
- Abrahams, A., Schlegel, R. W., & Smit, A. J. (2021). A novel approach to quantify metrics of upwelling intensity, frequency, and duration. *Plos one*, 16(7), e0254026. doi:10.1371/journal.pone.0254026
- Schlegel, R. W., Oliver, E. C., & Chen, K. (2021). Drivers of Marine Heatwaves in the Northwest Atlantic: The Role of Air–Sea Interaction During Onset and Decline. *Frontiers in Marine Science*. doi:10.3389/fmars.2021.627970
- Goldsmith, J., McKindsey, C. W., Schlegel, R. W., Stewart, D. B., Archambault, P., & Howland, K. L. (2020). What and where? Predicting invasion hotspots in the Arctic marine realm. *Global change biology*, 26(9), 4752-4771. doi:10.1111/gcb.15159
- Schlegel, R. W. (2020). Marine Heatwave Tracker. <http://www.marineheatwaves.org/tracker>. doi:10.5281/zenodo.3787872
- Schlegel, R. W., Oliver, E. C. J., Hobday, A. J., Smit, A. J. (2019). Detecting marine heatwaves with sub-optimal data. *Frontiers in Marine Science*, 6 (737). doi:10.3389/fmars.2019.00737
- Schlegel, R. W., Smit, A. J. (2018). heatwaveR: A central algorithm for the detection of heatwaves and cold-spells . *Journal of Open Source Software*, 3 (27), 821. doi:10.21105/joss.00821
- Schlegel, R. W., Oliver, E. C. J., Wernberg, T., Smit, A. J. (2017). Nearshore and offshore co-occurrence of marine heatwaves and cold-spells. *Progress in Oceanography*, 151, 189-205. doi:10.1016/j.pocean.2017.01.004

## Recent Conferences

- ASSW Feb 2023** - *The changing fjords of the European Arctic: what do the data say?* (Pres.)
- PSSA Jan 2023** - *Dispatches from the North: kelp under the ice* (Pres.)
- SSC Oct 2021** - Aggregated Data Products for Svalbard (Poster)
- CZC Jun 2021** - Kelps in the Eastern Canadian Arctic: ... habitat suitability and abundance (Pres.)
- SIOS Online Jun 2021** - Combining data analysis with ... reanalysis data around Svalbard (Pres.)
- ArcticNet Dec 2020** - Current and future habitat ... of kelps in the Eastern Canadian Arctic (Pres.)
- AGU Dec 2020** - Primary drivers of marine heatwaves in the Northwest Atlantic (Poster)
- GHR SST Jun 2020** - Comparison of multiple SST products using the MHW Tracker (Pres.)
- CMOS Mar 2020** - Primary drivers of marine heatwaves in the Northwest Atlantic (Pres.)
- OSM Feb 2020** - Marine Heat Waves and Ocean Biogeochemical Extremes I & II (Chair)
- ArcticNet Dec 2019** - The relationship between Arctic kelps and their environment (Pres.)
- CMOS Jul 2019** - Detecting marine heatwaves with sub-optimal data (Poster)
- Primary drivers of marine heatwaves in the Northwest Atlantic (Poster)
- IMBeR Jun 2019** - Detecting marine heatwaves with sub-optimal data (Poster)
- Primary drivers of marine heatwaves in the Northwest Atlantic (Pres.)
- PSSA Jul 2018** - South African *in situ* collected ... data for phyecological research (Pres.)
- OSM Feb 2018** - Predominant ... Patterns during Coastal Marine Heatwaves (Poster)

## References

**Prof. Jean-Pierre Gattuso:** SU, CNRS, [jean-pierre.gattuso@imev-mer.fr](mailto:jean-pierre.gattuso@imev-mer.fr)

**Prof. Eric Oliver:** DO, DAL, [eric.oliver@dal.ca](mailto:eric.oliver@dal.ca)

**Prof. AJ Smit:** DBCB, UWC, [ajsmit@uwc.ac.za](mailto:ajsmit@uwc.ac.za)

**Prof. Thomas Wernberg:** SBS, UWA, [thomas.wernberg@uwa.edu.au](mailto:thomas.wernberg@uwa.edu.au)

**Dr. Sarah Perkins-Kirkpatrick:** CCRC, UNSW, [sarah.kirkpatrick@unsw.edu.au](mailto:sarah.kirkpatrick@unsw.edu.au)

## Career Profile

**Nov '20 – Jul '24** FACE-IT *Nice, France*

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*Data Scientist*

**Oct '19 – Sep '20** WHOI *Woods Hole, USA*

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*Postdoctoral Fellow*

**Sep '18 – Nov '20** Dalhousie *Halifax, Canada*

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*Postdoctoral Fellow*

**Jan '18 – July '18** UWC *Cape Town, South Africa*

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*Postdoctoral Researcher*

**Jan '15 – May '18** R Workshops *South Africa*

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*Instructor/Developer*

**Jan '15 – Nov '17** UWC/UCT *Cape Town, South Africa*

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*Demonstrator*

**Jan '15 – Nov '17** UWC *Cape Town, South Africa*

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*PhD Candidate*

**Apr '14 – Oct '14** UWC *Cape Town, South Africa*

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*Research Assistant*

**Jan '14 – Feb '15** Two Oceans Aquarium *Cape Town, South Africa*

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*Diving Instructor*

**Dec '13** R/V Meteor *Indian/Atlantic Ocean*

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*Research Crew Member*

**Jan '12 – Jan '13** IDive *Athuruga/Thudufushi, Maldives*

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*Diving Instructor*

*Further details available upon request*

## Computing Competencies

Professional training in all standard Microsoft Office programs. Academic training in MATLAB, ROMS, ODV, and Python. Markdown and LaTeX document creation. Wide range of advanced R competencies including but not limited to: university curriculum, workshop development, Shiny web application deployment, and package (software) creation. Statistical analysis/decomposition of time series data. Handling large atmospheric and oceanic datasets from *in situ*, remotely sensed, reanalysis, and model sources. Development, maintenance, and dissemination of environmental observation data products. Equally capable in both Windows and Linux based operating systems.

## Training/Certifications

Intercollegiate leadership training. Teaching English as a Foreign Language (TEFL) Diploma. Professional Association of Diving Instructors (PADI) Specialty Instructor. Class IV commercial diving certification. Coastal ecology sampling techniques. Deployment of CTDs, gliders, bongo drums, and other underway sampling equipment. Identification of pelagic larva. Level three first aid certification.

## Personal Details

<b>Surname:</b>	Schlegel
<b>First Name(s):</b>	Robert William
<b>Date of Birth:</b>	December 16 <sup>th</sup> , 1985
<b>Nationality:</b>	United States Citizen
<b>Language proficiency:</b>	English (native) French (B1) Afrikaans (conversational) German (conversational)
<b>e-mail:</b>	<a href="mailto:robwschlegel@gmail.com">robwschlegel@gmail.com</a>

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