

Robin J. Fales, Ph.D.

University of California, Irvine
Department of Ecology and Evolutionary Biology
Post-Doctoral Scholar

[Research Website](#), [Google Scholar](#)

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EDUCATION

- 2023 Ph.D. Biological Science, University of Washington
Dissertation – Climate change impacts on kelp: Physiological responses across habitats, species, and populations. Advisor: Dr. Emily Carrington.
- 2019 M.S. Biological Science, California State Polytechnic University, Pomona
Thesis – Distribution, local extinctions, long-term change, community dynamics and demography of *Pelvetiopsis californica* (Phaeophyceae, Fucales)
Advisor: Dr. Jayson R. Smith.
- 2016 B.S. Ecology and Evolutionary Biology, University of California, Irvine

EMPLOYMENT

- | | |
|------------------|---|
| 2023 – Present | Post-Doctoral Scholar, University of California, Irvine, Bracken Laboratory |
| 2019 – 2023 | Graduate Student Researcher/TA, University of Washington |
| 2016 – 2019 | Research Technician, Multi-Agency Rocky Intertidal Network (MARINE) |
| 2016 – 2019 | Graduate Student Researcher/TA, Cal Poly Pomona |
| Summer 2018 | Contract Research Technician, Laguna Ocean Foundation |
| Summer 2017/2018 | Contract Research Technician, San Elijo Lagoon Restoration |
| Summer 2016 | Junior Specialist, UC Irvine, Bracken Laboratory |

AWARDS

- 2023 Nominee for Outstanding Undergraduate Mentor Award, Undergraduate Research Symposium, University of Washington
- 2021 Climate Adaptation Science Fellow, Northwest Climate Adaptation Science Center
- 2021 Best Student Paper. Sandra E. Shumway Award, National Shellfisheries Association
- 2021 [Photography Competition](#) Finalist. Hilda Canter-Lund Award, British Phycological Society
- 2019 Outstanding Teaching Associate. Larry McKane Award, Cal Poly Pomona Department of Biology
- 2018 Honorable Mention for Best Student Oral Paper. M. James Allen Award, Southern California Academy of Sciences

SKILLS

- Macrophyte physiology assays (kelp & seagrass growth, photosynthesis & respiration, PAM fluorimetry, nutrient uptake)
- Extensive knowledge of seaweed and invertebrate taxonomy

- R for statistical analyses, maps, & data visualization (ex: hypothesis testing, community analyses, PCA, GLM, GAM, BACI)
- Knowledge of California & Washington coastal marine ecosystems (species, habitats, tides/currents, oceanographic mixing, freshwater inputs, historic change, etc.)
- Oceanographic sensor use & deployment (e.g. temperature, salinity/conductivity, light, DO, pH, CTD casts)
- Methodology for MARINe/PISCO intertidal biodiversity surveys & long-term monitoring
- Marine ecology laboratory & field experimental designs
- Field work & research in diverse aquatic habitats (rocky intertidal, nearshore subtidal, mud flats)
- Experience leading and managing research teams in the field and laboratory
- Data management for large data sets
- Actionable science/co-production and formation of collaborations with diverse partners
- Undergraduate & graduate student mentorship

PROFESSIONAL TRAINING

2022 – 2023 Identity, Belonging and Inquiry in Science ([IBIS](#)) Program – 1 quarter of evidence-based mentoring training with a focus on engaging students from diverse backgrounds in marine biology & mentored a student for 3 quarters.

2021 – 2022 North West Climate Adaptation Science Fellowship – 3 quarters of training on actionable science, co-production, and working with diverse stakeholders and partners.

GRANTS & SCHOLARSHIPS

<u>University of Washington</u>	<u>Total: \$93,413</u>
2023 International Conference Travel Funding, UW Graduate School	\$500
2023 Conference Travel Funding, UW Biology	\$500
2023 Frye-Hotson-Rigg Writing Fellowship, UW Biology	\$10,000
2022 Friday Harbor Laboratories Research Fellowship Endowment Fund	\$3,000
2021 North West Climate Adaptation Science Center (NW CASC) Fellowship Co-production with Washington Department of Natural Resources. Kelp in the Salish Sea: A Comparative Study of Responses to Climate Change and Marine Heatwaves	\$35,639
2021 Robert T. Paine Experimental & Field Ecology Fellowship, UW Biology	\$10,000
2021 Student Technology Fund, University of Washington, Equipment funding	\$20,000
2021 Frederic H. & Kirstin C. Nichols Endowed Graduate Fellowship, FHL	\$2,000
2021 Graduate Fellowship in Marine Ecology, FHL	\$2,000
2021 Emily Carrington Endowed Student Travel Support Fund, FHL	\$200
2021 Walker Family Award, UW Biology	\$5,089
2021 Grant in Aid of Research, Phycological Society of America Project: Physiological response of an intertidal kelp (<i>Hedophyllum sessile</i>) to aerial heatwaves	\$1,985
2020 Richard R. and Megumi F. Strathmann Endowed Fellowship, FHL	\$1,000
2020 Suzanne Ragen Friday Harbor Laboratories Endowed Scholarship, FHL	\$1,500

Cal Poly Pomona

Total: \$21,800

2018	Conference Travel Award, MENTORES	\$800
2018	Cal Poly Pomona Graduate Research Funds	\$750
2017	NSF BioTiER (Biological Training in Education and Research) Scholarship	\$10,000
2017	MENTORES Research Funds	\$1,000
2017	Rachel Carson Environmental Science Scholarship, CPP Biology Dept.	\$5,000
2017	Cal Poly Pomona Graduate Research Funds	\$750
2017	MENTORES Scholarship (Mentoring, Educating, Networking, and Thematic Opportunities for Research in Engineering and Science)	\$3,500

SCIENTIFIC PUBLICATIONS & REPORTS

Peer Reviewed Scientific Publications

- Whitaker SG, Ambrose RF, Anderson LM, **Fales RJ**, Smith JR, Sutton SG, and Miller RJ. 2023. Ecological restoration using intertidal foundation species: Considerations and potential for rockweed restoration. *Ecosphere*.14:e4411.
- Fales RJ** and Smith JR. 2022. Long-term change in a high-intertidal rockweed (*Pelvetiopsis californica*) and community-level consequences. *Marine Biology*. 169:34. doi: 10.1007/s00227-022-04022-1
- Harris LST, Fennell J, **Fales RJ**, and Carrington E. 2021. Spatial-temporal growth, distribution, and diffusion of marine microplastic research and national plastic policies. *Water, Air, & Soil Pollution*. 232:400. doi: 10.1007/s11270-021-05352-4.
- Fales RJ**, Boardman FC, and Ruesink JL. 2020. Reciprocal interactions between bivalves and seagrass: a review and meta-analysis. *Journal of Shellfish Research*. 39(3):547-562. doi:10.2983/035.039.0305. Awarded Open Access & Best Student Paper.
- Elsberry LA, **Fales RJ**, and Bracken MES. 2018. Changes in biodiversity and species associations along a latitudinal gradient. *Frontiers of Biogeography*. 10:1-10.

Technical Reports

- Whitaker SG, Sutton SG, **Fales RJ**, Smith JR, Raimondi PT, Ambrose RF, Cavanaugh KC, and Miller RJ. 2020. Rockweeds as intertidal marine foundation species: A literature review of their ecological importance and restoration potential. Technical report for California Ocean Protection Council.
- Smith JR, Arre BC, Matuch C, **Fales RJ**, Jeffus M, Agler ST, and Perkins J. 2019. Rocky intertidal communities in Laguna Beach: Initial assessment and baseline establishment for elucidation of the effectiveness of Laguna Ocean Foundation's tidepool educator and tidewater docent programs. Technical Report for Laguna Ocean Foundation.

Manuscripts in Preparation

- Fales RJ** and Carrington E. Intertidal kelp (*Hedophyllum sessile*) response to experimental aerial heatwaves and the Pacific Northwest heat dome. *In prep* for *Functional Ecology*.
- Fales RJ**, Berry HD, Claar DC, and Carrington E. *Nereocystis luetkeana* thermotolerance across the Salish Sea. *In prep* for *Journal of Phycology*.
- Fales RJ**¹, Weigel BL¹, Berry HD, Carrington E, and Dethier M. Intraspecies comparison of the effect temperature and nutrient limitation on kelp physiology. *In prep* for *Global Change Biology*.

Little J, **Fales RJ**, Murie K, Sebens K, Carrington E. Mussel mortality size escape from Pacific Northwest heat dome. *In prep.*

Roethler M, **Fales RJ**, Padilla-Gamiño JL. Kelp responses to temperature and ocean acidification, a meta-analysis. *In prep* for Global Change Biology.

¹ = indicates co-first authorship

MEDIA COVERAGE

[How heat waves warp ecosystems](#) – High Country News featured research on PNW heat dome and photographs

PROFESSIONAL PRESENTATIONS

Invited Special Sessions at Conferences

Western Society of Naturalists, Invited Special Heatwaves Session, Nov. 2021

Fales RJ and Carrington E. Physiological impacts of the PNW heat dome on an intertidal kelp: High survival with tissue loss.

Contributed Conference Presentations

International Temperate Reefs Symposium, Talk, January 2023, Hobart, Tasmania, Australia

Fales RJ, Berry HD, Claar D, Carrington E. Bull kelp thermotolerance does not differ across thermo-regions within the Salish Sea

Western Society of Naturalists, Talk, November 2022, Oxnard, CA

Fales RJ, Weigel BL, Berry HD, Carrington E. Bull vs Sugar Kelp: Physiological comparison of the interactive effects of temperature & nitrogen on *Nereocystis* and *Saccharina*.

Weigel BL, Small SL, **Fales RJ**, Berry HD, Dethier M. Effects of ocean warming across the life cycle of the bull kelp, *Nereocystis luetkeana*

Salish Sea Ecosystem Conference, Snapshot talks, April 2022, online

Fales RJ and Carrington E. Sacrificial Distal Tissue: Physiological Response to the PNW Heat Dome by an Intertidal Kelp.

Weigel BL, **Fales RJ**, Dethier M, Carrington E. Effects of heat stress and nitrogen limitation on the physiology of gametophytes and sporophytes of the bull kelp, *Nereocystis luetkeana*.

Western Society of Naturalists, Speed Talks, November 2021, online

Weigel BL¹, **Fales RJ**¹, Murie KA, Dethier M, Carrington E. Interactive effects of heat stress and nitrogen limitation on the physiology of bull kelp, *Nereocystis luetkeana*.

Carrington E, Little J, **Fales RJ**, Murie KA, Sebens K. Not their first rodeo? Mussel mortality at a known hot-spot following a historic heat wave.

Western Society of Naturalists, Speed Talk, November 2020, online

Fales RJ and Carrington E. Hot summer tides: Photosynthesis and growth rate of an intertidal kelp.

National Shellfisheries Association, March 2021, online

Ruesink JL, **Fales RJ**, Boardman FC. Reciprocal Interactions between Bivalve Molluscs and Seagrass: A Review and Meta-Analysis.

Western Society of Naturalists, Talk, November 2018, Tacoma, WA

Fales RJ and Smith JR. Local extinctions and the current patchy distribution of the rockweed *Pelvetiopsis californica*.

Southern California Academy of Sciences, Talk, May 2018, Pomona, CA

Fales RJ and Smith JR. Distribution, long-term change, and factors influencing patchiness through the geographic range of the rockweed, *Pelvetiopsis californica*. Honorable mention, M. James Allen best student oral paper.

Multi-Agency Rocky Intertidal Network, Poster, April 2018

Fales RJ and Smith JR. Distribution, long-term change, & factors influencing patchiness through the geographic range of *Pelvetiopsis californica* (rockweed).

Western Society of Naturalists, Poster, November 2017, Pasadena, CA

Fales RJ and Smith JR. *Pelvetiopsis californica* (rockweed): distribution, long-term change, & factors influencing patchiness through its geographic range.

Western Society of Naturalists, Talk, November 2015, Sacramento, CA

Fales RJ, Elsberry LA, and Bracken MES. High stress in So-Cal: species associations shift from negative to positive around a major biogeographic boundary.

Departmental Presentations

University of Washington Graduate Student Seminar, October 2022

Fales RJ. Bull kelp thermotolerance across the Salish Sea: What is too hot?

Friday Harbor Laboratories Seminar, August 2022

Fales RJ. Bull kelp thermotolerance across the Salish Sea: What is too hot?

University of Washington Graduate Student Seminar, February 2022

Fales RJ. How to Survive a Historic Heatwave: Physiological Impacts of the PNW Heat Dome on an Intertidal Kelp.

University of Washington Graduate Student Seminar, January 2021

Fales RJ. Impacts of heat & stressors on the physiology of habitat forming kelps.

Cal Poly Pomona Biological Science Department Seminar, Talk, June 2018

Fales RJ, Lauman ST, Sutton S, et al. Field Experience in Hawaii: Restoration ecology in a dry forest and rapid change in coral reef communities.

Cal Poly Pomona Science Symposium, Poster, May 2018

Fales RJ and Smith JR. Distribution, local extinctions, and long-term change with comparison to historical records of the rockweed, *Pelvetiopsis californica*.

¹= indicates co-first authorship

WORKSHOPS, WORKING GROUPS, & SYMPOSIA

2021- Puget Sound Working Group, Washington Department of Natural Resources, quarterly meetings to share active kelp research and progress.

2023 Kelp Action Plan Workshop, North West Straits Commission. Assessment of progress made following the Puget Sound Kelp Conservation and Recovery Plan.

2022 Seaweed Knowledge Symposium, Washington SeaGrant. Convened seaweed scientists, aquaculture practitioners, and tribes together to discuss seaweed in Washington State.

TEACHING EXPERIENCE

UW Friday Harbor Laboratories, Teaching Assistant

Marine Biology in the Field (MARBIO 488), Fall 2022. Co-taught for an intensive field experience program for marine biology majors. 16 upper-division students.

Marine Botany (FHL 440), Spring 2021. Teaching Assistant for ZooBot Program at Friday Harbor Labs. Co-taught the laboratory. 16 upper-division students.

Integrative Oceans (OCEAN 210) & **Marine biology** (FHL 250), Spring 2020. Split TAship for two courses in the online Spring Marine Studies (SMS) program. 15 students.

University of Washington, Teaching Assistant

Biomechanics (BIOL 427), Winter 2023. Laboratory instructor responsible for two sections. 30 upper-division students. Supervisor: Dr. Emily Carrington.

Invertebrate Zoology (BIOL 434), Winter 2021. Laboratory instructor and created new digital content for online learning. 40 upper-division students.

Marine Ecology Processes (BIOL 423), Winter 2021. Reader/Grader.

Foundations in Ecology (BIOL 356), Fall 2020. Upper division laboratory course, responsible for 2 sections of online labs and in person outdoor fieldtrips. 40 upper-division students.

Marine Ecology (BIOL 233), Winter 2020. Co-taught laboratory, course was held at the Burke Museum. 20 upper-division students. Supervisor: Dr. Jennifer Ruesink.

Introductory Biology (BIOL 180), Fall 2019. Laboratory instructor responsible for two laboratory sections. 40 introductory biology major students.

California State Polytechnic University, Pomona, Teaching Associate

Foundations of Biology: Evolution, Ecology, and Biodiversity (BIO 123/1220L), 2016 – 2019 (6 quarters & 2 semesters). Laboratory instructor responsible for short lecture, lab instruction and supervision. As senior TA (2017 – 2019), had additional responsibility of creating a presentation used by all instructors and being shadowed by/mentoring new instructors. 40 students per quarter.

MENTORED STUDENTS

Undergraduates

- 2022 – 2023 Josephine Grell, University of Washington Marine Biology, Identity, Belonging and Inquiry in Science Program (IBIS)
- 2021 Isaac Conrad, University of Minnesota Duluth, Friday Harbor Labs National Science Foundation summer REU program
- 2021 – 2022 Monica Klopp, University of Washington & Friday Harbor Labs. Current position: MS student at San Diego State University
- 2021 – 2022 Vesta Baumgartner, University of Washington & Friday Harbor Labs. Current position: Substitute K-12 paraeducator
- 2018 – 2019 Meghan Jeffus, Cal Poly Pomona. Current position: MS student at Cal Poly Pomona
- 2017 – 2019 Sierra Sutton, Cal Poly Pomona. Current position: MARINe research technician

High school

2022 Eleanor Rollins, Friday Harbor Laboratory Young Investigator Summer Intern.
Current: Undergraduate at Gonzaga University

SERVICE

Departmental and University

Friday Harbor Laboratories

2022 – 2023 Marine Biology Teaching Faculty Search Committee
2021 – 2023 Teaching Advisory Committee
2022 Summer Seminar Series Co-Coordinator
2021 Nearshore Ecologist Post-Doctoral Hiring Committee

University of Washington, Department of Biology

2020 – 2023 Coordinating Committee (Liaison and leader for graduate students & department)
2021 – 2022 Graduate Student Research Reports Seminar Series

Cal Poly Pomona

2019 President, Associated Students Incorporate Biology Field Course Funding Committee

Public Outreach

2023 FHL Tide Bite Blog – [“Studying Seaweed in a Changing World”](#)
2022 Seaweed Knowledge Symposium, invited seaweed expert panelist
2020 Career panel for Laguna Ocean Foundation Summer interns
2019 Chaparral Middle School career day, careers in marine biology presentations

Scientific Community

Manuscripts reviewed

2023 Journal of Phycology (1), Ecology (1)
2022 Journal of Biogeography (1), Ecology (1)
2021 PLOS ONE (1), Marine Ecology Progress Series (1)

Society Memberships

2015 – Present Western Society of Naturalists
2018 – Present Phycological Society of America