TIMOTHY A. NELSON
Professor of Biology
Director, Blakely Island Field Station
Seattle Pacific University
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EDUCATION

Ph.D., Botany, University of Washington, 1995
Dissertation Topic: Interactions and Dynamics of Eelgrass (*Zostera marina* L.), Epiphytes, and Grazers in Subtidal Meadows of Puget Sound.

Participant, Third Autumn Course in Mathematical Ecology (1990), United Nations Center for Theoretical Physics, Trieste, Italy

Participant, Organization of Biological Field Stations/National Science Foundation Training in Ecoinformatics and GIS (2003), Sevilleta National Wildlife Refuge, New Mexico, USA.

B. S. *summa cum laude*, Biology Major; Seattle Pacific University; 1987

POSITIONS HELD

Director, Blakely Island Field Station, Seattle Pacific University	7/03 - present
Professor of Biology, Seattle Pacific University	7/04 - present
Chair, Department of Biology	7/07 - 6/13
Interim Associate Dean of Arts and Sciences	7/12 - 3/13
Associate Professor of Biology, Seattle Pacific University	9/98 - 7/04
Assistant Professor of Biology, Seattle Pacific University	9/95 - 9/98
Adjunct Instructor of Biology, Seattle Pacific University	9/92-6/95, 1/91-3/91

PROFESSIONAL MEMBERSHIPS

Phycological Society of America
International Phycological Society
British Phycological Society
Estuarine Research Foundation
Sigma Xi

PEER-REVIEWED PUBLICATIONS:

Nelson, T.A. and B.C. Gregg. 2013. Determination of EC-50 for normal oyster larvcal development in extracts from bloom-forming green seaweeds. *The Nautilus* 127(4):156-159.

Cohen, M. F., Hare, C., Kozlowski, J., McCormick, R. S. , Chen, L., Schneider, L., Knight, Z., Nelson, T. A., and Grewell, B. 2013. Wastewater polishing by a channelized macrophyte-dominated wetland and anaerobic digestion of the harvested phytomass. *Journal of Environmental Science and Health, Part A Toxic/Hazardous Substance & Environmental Engineering* 48:319-330.

PEER-REVIEWED PUBLICATIONS (CONTINUED):

Nelson, T.A., J. Olson, L. Imhoff, and A. Nelson. 2010. Aerial exposure and desiccation tolerances are correlated to species composition in "green tides" of the Salish Sea (northeastern Pacific). *Botanica Marina* 53:103-111.

Nelson, T.A., Haberlin, K., Nelson, A.V., Ribarich, H., Hotchkiss, R., Van Alstyne, K.L., Buckingham, L., Simunds, D.J., and Fredrickson, K. 2008. Ecological and physiological controls of species composition in green macroalgal blooms. *Ecology* 89:1287-1298.

Van Alstyne, KL, Koellermeier, L, and Nelson, TA. 2007. Spatial variation in dimethylsulfoniopropionate (DMSP) production in *Ulva lactuca* (Chlorophyta) from the Northeast Pacific. *Marine Biology* 150:1127-1135.

Nelson, T. A., A. V. Nelson and M. Tjoelker. 2003. Seasonal patterns in ulvoid algal biomass, productivity, and key environmental factors in the Northeast Pacific. *Botanica Marina* 46:263-275.

Nelson, T. A., D. Lee, and B. C. Smith. 2003. Toxic extracts from ulvoid macroalgae: Are "green tides" harmful algal blooms? *Journal of Phycology* 39(5):874-879.

Nelson, T. A. and A. Lee. 2001. A manipulative experiment demonstrates that blooms of the macroalga *Ulvaria obscura* can reduce eelgrass shoot density. *Aquatic Botany* 71:149-154.

Nelson, T. A., 1997. Epiphyte-grazer interactions on *Zostera marina* (Anthophyta: Monocotyledones): Effects of density on community function. *Journal of Phycology* 33:743-752.

Nelson, T. A., 1997. Interannual variance in a subtidal eelgrass community. *Aquatic Botany* 56:245-252.

Nelson, T. A. and J. R. Waaland, 1997. Seasonality of eelgrass, epiphyte, and grazer biomass and productivity in subtidal eelgrass meadows subjected to moderate tidal amplitude. *Aquatic Botany* 56:51-74.

Skubatz, H., T. A. Nelson, and B. J. D. Meeuse, 1993. Selective inhibition of heat-production in *Sauromatum guttatum* inflorescences by glyphosate. *Plant Physiology (Life Science Advances)* 12:5-8.

Skubatz, H., T. Nelson, B. J. D. Meeuse, and A. J. Bendich, 1991. Heat production in the Voodoo lily (*Sauromatum guttatum*) as monitored by infrared thermography. *Plant Physiology* 95:1084-1088.

Skubatz, H., T. Nelson, A. Dong, B. J. D. Meeuse, and A. Bendich, 1990. Infrared thermography of *Arum* lily inflorescences. *Planta* 182:432-436.

OTHER PUBLICATIONS

Nelson, T.A., (in press). The Seattle Pacific University herbarium. *Douglasia.*

Nelson, T.A., 2013. Introduction to N. A. Milchakova, and K. A. Parsons (eds.), *Travels with Seagrass: The Memoirs of Professor Ronald C. Phillips.* Business-Inform, London. 204 pp.

Nelson, T. A., S. Wyllie-Echeverria, and R. Thom. 2006. In Memoriam: Ronald C. Phillips. Estuarine Research Federation Newsletter.

RECENT PUBLISHED ABSTRACTS AND PRESENTATIONS AT MEETINGS:

Nelson, T., J. Olson, L. Imhoff, A. Bowen, and M. Melton. 2011. Video analysis of ulvoid algal and *Zostera* populations in greater Puget Sound. Twenty-fourth Northwest Algal Symposium, Cornet Bay, Washington.

Nelson, T.A. 2011. Stable isotope analysis and underwater video show the importance of highly localized factors in contributing to excessive growth of harmful algal blooms. Sixth Symposium on Harmful Algae in the United States, Austin, Texas.

Hylarides, M. J., J. Moon, T.A. Nelson, R.L. Ridgway. 2011. Immunofluorescence localization of dimethylsulfoniopropionate (DMSP) in thalli of the marine macroalga *Ulva lactuca.* Annual meeting of the Phycological Society of America, Seattle, Washington.

Nelson, T.A., J. Olson, L. Imhoff, M. Melton, and A. Bowen. 2010. Video analysis of ulvoid algae and *Zostera* in greater Puget Sound. Annual meeting of the Phycological Society of America, East Lansing, Michigan.

Moon, J., M. Nguyen, T.A. Nelson, and R.L. Ridgway. 2010. Polyclonal antibodies to dimethylsulfoniopropionate (DMSP): Initial characterization and specificity testing. Annual meeting of the Phycological Society of America, East Lansing, Michigan.

Hare, C., J. Kozlowski, R. McCormick, T. Nelson, L. Chen and M. F. Cohen. 2009. An integrated system for wastewater scrubbing and bioenergy production. Proceedings of the Annual Meeting of the AAAS, Pacific Division, San Francisco, California.

Gifford, S.-A., K. Van Alstyne, and T. Nelson. 2009. Temporal variation in water quality at sites with low and high macroalgal abundances in Penn Cove, Whidbey Island, Washington. Northwest Algal Symposium, Coupeville, Washington.

Nelson, T.A., Olson, J.K., Imhoff, L.D. 2009. Using underwater video analysis to determine ulvoid algal cover and overlap with eelgrass over a regional scale. Puget Sound Georgia Basin Ecosystem Conference, Seattle, Washington. (http://depts.washington.edu/uwconf/psgb/proceedings/papers/8C_Nelso.pdf)

Nelson, T.A., Van Alstyne, K.L., Nelson, A.V., Jackson, D., Olson, J.K., Imhoff, L.D. 2008. The good, the bad, and the stinking: Causes and consequences of ulvoid algal blooms. Annual meeting of the Phycological Society of America, New Orleans, Louisiana.

Olson, J.K, L.D. Imhoff, Nelson, T.A.. 2008. Desiccation controls the upper limit of species distribution among blooming ulvoid macroalgae. Annual meeting of the Phycological Society of America, New Orleans, Louisiana.

Imhoff, L.D., Olson, J.K., Nelson, T.A. 2008. Using underwater video analysis to determine large-scale spatial and temporal changes in macroalgal bloom occurrence. Annual meeting of the Phycological Society of America, New Orleans, Louisiana.

Nelson, T.A., Van Alstyne, K.L., Guerra, C., Olson, J.K., Imhoff, L.D. 2008. Using underwater video to examine the occurrence of green macroalgal blooms on a regional scale in Washington State, USA. 2008 Ocean Sciences Meeting, Orlando, FL.

Peter, L., Nelson, T., Van Alstyne, K., Ronhovde, E., Gifford, S., Cataldo, M., Nicely, A., Puglisi, M. 2007. Comparison of green algal bloom intensity and related water quality parameters at paired bloom" and "non-bloom" sites. Annual Meeting of the Phycological Society of America, Providence, RI.

RECENT PUBLISHED ABSTRACTS AND PRESENTATIONS AT MEETINGS (CONTINUED):

Guerra, C., Nelson, T., Ronhovde, E., Peter, L. 2007. Underwater video analysis allows for the mapping of green algal blooms throughout the inland marine waters of Washington State. Annual meeting of the Phycological Society of America, Providence, RI.

Nelson, T. A., K. L. Van Alstyne, D. Jackson. 2006. Dopamine in a green alga: Localization, release, and community effects. Annual meeting of the Phycological Society of America, Juneau, Alaska.

Nelson, T. A., D. Lee, B. C. Smith, and R. Prins. 2002. Are "green tides" harmful algal blooms? Allelopathic properties of extracts from *Ulva fenestrata* and *Ulvaria obscura*. Annual meeting of the Phycological Society of America, Madison, Wisconsin.

Nelson, T. A., K. L. van Alstyne, and H. Ribarich. 2002. The effects of nitrogen regime on growth, [CHN], [DMSP], [chlorophyll], [protein] and nitrogen uptake rate in *Ulvaria obscura* and *Ulva fenestrata.* Annual meeting of the Phycological Society of America, Madison, Wisconsin.

Rhodes, M. J. and T. A. Nelson. 2002. Interannual variation in coral reef plant communities of central Belize. Annual meeting of the Phycological Society of America, Madison, Wisconsin.

Nelson, T. A. 2001. Species composition and controls of ulvoid algal blooms in Washington State. *Journal of Phycology* 37(3 supplement):38. (Abstract)

Nelson, T.A., 2000. Preliminary studies of seasonality, ecology, and species composition of ulvoid algal blooms in Washington State (Abstract). *Journal of Phycology* 36(3 supplement):41. (Abstract)

Jones, K, A. Lee and T. Nelson. 2000. A characterization of ulvoid blooms and their abiotic environment in the San Juan Island Archipelago. Fourteenth Northwest Algal Symposium, University of British Columbia, Vancouver, British Columbia, Canada.

Lee, A., K. Jones and T. Nelson. 2000. Environmental determinants of ulvoid algal species composition. Fourteenth Northwest Algal Symposium, University of British Columbia, Vancouver, British Columbia, Canada.

Nelson, T. A., 1996. Implications of a simple predator-prey model for epiphyte-grazer dynamics in subtidal eelgrass (*Zostera marina*) meadows. Ecological Summit '96, Copenhagen: Program and Abstracts.

GRANT FUNDING-INTRAMURAL

PI: Timothy A. Nelson
Title: Establishment of Permanent Transects to Establish Long Term Patterns in Marine Community Structure and Function
Funding Source: Seattle Pacific University Faculty Research Grant
Funding Period: 1 Year (1997) **Amount:** $2,050.

PI: Timothy A. Nelson
Title: An ecological investigation of "green tides" (blooms of ulvoid macroalgae) in North Puget Sound
Funding Source: Seattle Pacific University Faculty Research Grant
Funding Period: 1 Year (1998)
Amount: $1,752.

PI: Timothy A. Nelson
Title: Are "green tides" harmful algal blooms?
Funding Source: Seattle Pacific University Senior Faculty Grant
Funding Period: 1 Year (July 2002-July 2003)
Amount: $2,500

PI: Timothy A. Nelson
Title: Using underwater video analysis to test hypotheses regarding temporal changes in ulvoid algal bloom abundance in Puget Sound
Funding Source: Seattle Pacific University Senior Faculty Grant
Funding Period: 1 Year (July 2009-July 2010)
Amount: $4,500

GRANT FUNDING-EXTRAMURAL

PIs: City of Federal Way, Timothy A. Nelson as contractor to do work
Title: Using stable isotopes to determine the nitrogen source causing algal blooms in Dumas Bay, Washington.
Funding Agency: Washington State Department of Ecology
Funding Period: 1 year (2010-11)
Amount: $46,000

PIs: Timothy A. Nelson and Kathryn L. Van Alstyne (Western Washington University)
Title: RUI: Collaborative Research: Production of toxins by bloom-forming macroalgae.
Funding Agency: National Science Foundation.
Funding Period: 3 years (September 2007 through September 2010)
Amount: $563,000 (Total to WWU and SPU)

PIs: Timothy A. Nelson and Kathryn L. Van Alstyne (Western Washington University)
Title: RUI: Harmful ulvoid macroalgal blooms in Washington State.
Funding Agency: National Science Foundation.
Funding Period: 3 years (September 2005 through September 2008)
Amount: $212,202 (Total to WWU and SPU)

PI: Timothy A. Nelson (as Acting Chair of Biology)
Title: Research Start-Up Grant for New Faculty
Funding Agency: Murdock Charitable Trust.
Funding Period: Open, beginning in September 2006
Amount: $25,000 (+ a $25,000 University match).

GRANT FUNDING-EXTRAMURAL (CONTINUED)

PIs: Kathryn Van Alstyne (Western Washington University)and Timothy A. Nelson
Title: An ecological investigation of "green tides" (blooms of ulvoid macroalgae) in North Puget Sound.
Funding Agency: National Oceanic and Atmospheric Administration.
Funding Period: 3 years (September 2005 through September 2008)
Amount: $454,516 (Total to WWU and SPU)

PI: Timothy A. Nelson
Title: An ecological investigation of "green tides" (blooms of ulvoid macroalgae) in North Puget Sound.
Funding Agency: Murdock College Research Program for Life Sciences.
Funding Period: 2 years (April 1998 through April 2000)
Amount: $45,889 ($7,389 in matching funds provided by SPU)

PI: Timothy A. Nelson
Title: An ecological investigation of green tides (blooms of ulvoid macroalgae) in the Pacific Northwest.
Funding Agency: Murdock College Research Program for Life Sciences.
Funding Period: Two years (April 2000 through April 2002)
Amount: $32,000.

PROFESSIONAL SERVICE

Funds Manager, Phycological Society of America (2005-2014)
Local Organizer, Phycological Society of America Annual Meeting (2011)
15th, 23rd, and 27th Nor thwest Algal Symposium Organizer (2001, 2009, 2013)
National Association of Marine Laboratories Board of Directors (1997-2004)
Western Association of Marine Laboratories President (2001-2002)
Northwest Algal Symposium Student Paper Award Committee (2001-2002)
Chair, Algal Ecology session, Phycological Society of America Annual Meeting (2001, 2011)
Chair, Algal Ecology session, 14th Northwest Algal Symposium (2000)
Webmaster, Northwest Algal Symposium (2000-present)
Listserver Manager, Northwest Algal Symposium (2000-present)
Listserver Manager, Phycological Society of America (2010-present)

MANUSCRIPT REVIEWER FOR THE FOLLOWING AGENCIES

Environmental Protection Agency
Puget Sound Partnership

MANUSCRIPT REFEREE FOR THE FOLLOWING JOURNALS

Aquatic Biology
Aquatic Botany
Botanica Marina
Chinese Journal of Oceanology and Limnology
Journal of Environmental Engineering
Environmental Evidence
Environmental Monitoring and Assessment
Environmental Science and Technology
Global Change Biology
Harmful Algae
Journal of Applied Phycology
Journal of Biological Research (Thessaloniki)
Journal of Experimental Marine Biology and Ecology
Journal of Phycology
Journal of Sea Research
Marine Biology
Marine Biotechnology
Marine Ecology Progress Series
Marine Environmental Research
North American Journal of Aquaculture
Oecologia
Phygologia

GRANT REVIEWER FOR THE FOLLOWING PROGRAMS

- **US-State or Local**
  - *New York SeaGrant Program*
  - *Rhode Island Research Alliance*
  - *Padilla Bay National Estuarine Research Reserve*

- **US-Federal**
  - *National Science Foundation (Geosciences Directorate, Biological Oceanography Division; Biosciences Directorate, several different divisions)*
  - *National Science Foundation Panelist (Biosciences Directorate)*
  - *National Oceanic and Atmospheric Administration*
  - *Environmental Protection Agency*
  - *ECOHAB Program (interagency)*
  - *ECOHAB Program Panelist*
  - *National Estuarine Research Reserve System*

- **International**
  - *Irish Research Foundation*
  - *National Sciences and Engineering Research Council of Canada/Counseil de Recherches en Sciences Naturelles et en Génie du Canada*