

School of Aquatic and Fishery Sciences, College of the Environment
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EXPERTISE

Research and laboratory supervision at the University of Washington; coordinator of the Puget Sound Ecosystem Monitoring Program (PSEMP) Nearshore work group; ecology of marine, estuarine, and riverine aquatic habitats; juvenile salmonid life history; non-indigenous species; statistical analysis.

PROFESSIONAL EXPERIENCE

Research Scientist, UW School of Aquatic and Fishery Sciences (SAFS), 2000 – present
Research Assistant, School of Fisheries, University of Washington, 1997 – 2000
Research Technician, Smithsonian Environmental Research Center, 1994 – 1997
Teaching Assistant (Ecology), tutor (Genetics), Brown University, 1993

EDUCATION

2000 **M.S.**, *University of Washington, Seattle, WA; Fisheries*
1994 **B.S.**, *Brown University, Providence, RI; Biology*
1992 **Sea Semester**, *Boston University, Woods Hole, MA*

STUDENT ADVISER

PhD committees: Stuart Munsch (2016), Sarah Heerhartz (2013). MS committees: Kerry Accola (2021); Bob Oxborrow (2021); Timothy Lee (2017); Kotaro Ono (2010); Errin Kramer-Wilt (2010); Sarah Heerhartz (2010); Emily Howe (2006). 1-2 undergraduate capstone students per year.

PRESS/OUTREACH (SELECTED)

[KUOW The Wild](#), [Hakai Magazine](#), [Seattle Times](#), [Ensia.org](#); [UW News](#); [Seattle Magazine](#)

SESSION ORGANIZER/CHAIR (SELECTED)

[The Nearshore Summit](#), 2021: Conference planning committee.
Salish Sea Ecosystem Conference, 2018, Seattle, WA: Coordinating Regionally-accepted Nearshore Geospatial Data.
Salish Sea Conference, 2016, Vancouver, BC: Shoreline Monitoring: Citizen Science, Restoration Effectiveness, and Data Integration.
Salish Sea Conference, 2014, Seattle, WA: How science informs decisions to catalyze action.
Puget Sound/Georgia Basin Conference, 2009 Seattle, WA: Salmon in the Nearshore.
American Fisheries Society, 2007, San Francisco, CA: Estuarine Portraits: lessons learned about fish, habitats, and people.
Estuarine Research Federation, 2005, Norfolk, VA: Innovative techniques for assessing fish and invertebrate habitat linkages in estuaries and coastal systems.

INVITED SPEAKER (SELECTED)

Guest lecturer in Seattle University class on marine restoration ecology research (2020); UW Friday Harbor Laboratory class on field marine biology (2019); UW College of Architecture and Urban Planning class on ecological design and planning (2005-2018); UW Information School class on data visualization (2018); UW SAFS restoration ecology class (2012).
Earth Optimism Panel: Building Climate-Resilient Communities on the Coasts, Smithsonian Environmental Research Center, 2020.
Seminar speaker at East Carolina University, 2020.
Keynote speaker at the Second International Workshop on Eco-shoreline Designs for Sustainable Coastal Development, 2018, Hong Kong, China.
Monster Jam seminar, Northwest Fisheries Science Center, 2015, Seattle, WA.

CONFERENCE PRESENTATIONS (SELECTED)

Salish Sea Conference – 2020, 2018, 2016, 2014, 2011, 2009, 2007 Vancouver, BC & Seattle, WA.
Coastal and Estuarine Research Federation – 2015 and 2009 Portland, OR, 2005 Norfolk, VA, 2003
Seattle, WA, 2001 St. Pete Beach, FL, 1999 New Orleans, LA
American Fisheries Society – 2007 San Francisco, CA
Estuarine and Coastal Sciences Association (ECSA) – 2004 Ballina, Australia
CALFED Science Conference – 2010, 2006, 2004, 2003, 2001 Sacramento, CA
Restore America's Estuaries – 2018 Long Beach, CA, 2004 Seattle, WA
Ecological Society of America – 1999 Spokane, WA
Benthic Ecology Meeting – 1997 Portland, ME
Shallow Water Conference – 1995 Atlantic City, NJ

MANUSCRIPT AND GRANT REVIEW (SELECTED)

Manuscripts – Marine Ecology Progress Series; Journal of Experimental Marine Biology and Ecology; Estuaries and Coasts; Estuarine, Coastal and Shelf Science; Global Ecology and Biogeography; PLoS ONE; Ecological Engineering; Aquatic Conservation; Fisheries Research, Biological Invasions; Biodiversity and Conservation; San Francisco Estuary and Watershed Science; Aquatic Sciences; Marine Environmental Research; Ecological Research; Environmental Science and Technology; Aquatic Ecology; Fishery Bulletin; Journal of Natural History; Northwest Science.
Grants – Sea Grant; NOAA/CSCOR; CALFED Ecosystem Restoration; Coastal Restoration and Enhancement through Science and Technology (CREST), Hudson River Foundation.

EDITOR

Bilkovic, D.M., M.M. Mitchell, M.K. La Peyre, and **J.D. Toft** (Eds). 2017. Living Shorelines: The Science and Management of Nature-Based Coastal Protection. CRC Press. 499 pp.
Hamel, N., J. Joyce, M. Fohn, A. James, **J. Toft**, A. Lawver, S. Redman and M. Naughton (Eds). 2015. 2015 State of the Sound: Report on the Puget Sound Vital Signs. November 2015. 86 pp.

PEER-REVIEWED MANUSCRIPTS

Toft, J.D., M.N. Dethier, E.R. Howe, E.V. Buckner, and J.R. Cordell. 2021. Effectiveness of living shorelines in the Salish Sea. *Ecological Engineering*.

Munsch, S.H., J.S. Barber, J.R. Cordell, P.M. Kiffney, B.L. Sanderson, and **J.D. Toft**. 2021. Small invertebrates in bivalve-cultivated and unmodified habitats of nearshore ecosystems. *Hydrobiologia*.

Sawyer, A.C., **J.D. Toft**, and J.R. Cordell. 2020. Seawall as salmon habitat: Eco-engineering improves the distribution and foraging of juvenile Pacific salmon. *Ecological Engineering* 151:105856.

Morris, R.L., et al. (25 total authors). 2019. Design Options, Implementation Issues and Evaluating Success of Ecologically Engineered Shorelines. *Oceanography and Marine Biology: An Annual Review* 57:169-228.

Toft J.D., S.H. Munsch, J.R. Cordell, K. Siitari, V.C. Hare, B. Holycross, L.A. DeBruyckere, C.M. Greene, and B.B. Hughes. 2018. Impact of multiple stressors on juvenile fish in estuaries of the Northeast Pacific. *Global Change Biology* 24:2008–2020.

Lee, T.S., **J.D. Toft**, J.R. Cordell, M.N. Dethier, J.W. Adams, and R.P. Kelly. 2018. Quantifying the effectiveness of shoreline armoring removal on coastal biota of Puget Sound. *PeerJ* 6:e4275.

Toft, J., L. Fore, T. Hass, B. Bennett, L. Brubaker, D. Brubaker, C. Rice, and Island County Beach Watchers. 2017. A framework to analyze citizen science data for volunteers, managers, and scientists. *Citizen Science: Theory and Practice* 2:9.

Cordell, J.R., S.H. Munsch, M.E. Shelton, and **J.D. Toft**. 2017. Effects of piers on assemblage composition, abundance, and taxa richness of small epibenthic invertebrates. *Hydrobiologia* 802: 211-220.

Toft J.D., D.M. Bilkovic, M.M. Mitchell, and M.K. La Peyre. 2017. A Synthesis of Living Shoreline Perspectives. In Bilkovic, D.M., M.M. Mitchell, M.K. La Peyre, and **J.D. Toft** (Eds). Living Shorelines: The Science and Management of Nature-Based Coastal Protection. CRC Press. p. 481-486.

- Cordell, J.R., **J.D. Toft**, S. Munsch, and M. Goff. 2017. Benches, Beaches, and Bumps: How Habitat Monitoring and Experimental Science can Inform Urban Seawall Design. In Bilkovic, D.M., M.M. Mitchell, M.K. La Peyre, and **J.D. Toft** (Eds). Living Shorelines: The Science and Management of Nature-Based Coastal Protection. CRC Press. p. 421-438.
- Bilkovic, D.M., M.M. Mitchell, **J.D. Toft**, and M.K. La Peyre. 2017. A Primer to Living Shorelines. In Bilkovic, D.M., M.M. Mitchell, M.K. La Peyre, and **J.D. Toft** (Eds). Living Shorelines: The Science and Management of Nature-Based Coastal Protection. CRC Press. p. 3-9.
- Munsch, S.H., J.R. Cordell, and **J.D. Toft**. 2017. Effects of shoreline armoring and overwater structures on coastal and estuarine fish: opportunities for habitat improvement. *Journal of Applied Ecology*.
- Munsch, S.H., J.R. Cordell, and **J.D. Toft**. 2017. A Quantitative Chronology of Diurnal Feeding in Juvenile Pacific Salmon. *Transactions of the American Fisheries Society* 146:222-229.
- Dethier, M.N., **J.D. Toft**, and H. Shipman. 2016. Shoreline armoring in an inland sea: science-based recommendations for policy implementation. *Conservation Letters*.
- Munsch, S.H., J.R. Cordell, and **J.D. Toft**. 2016. *Feature Article*. Fine-scale habitat use and behavior of a nearshore fish community: nursery functions, predation avoidance, and spatiotemporal habitat partitioning. *Marine Ecology Progress Series* 557:1-15.
- Dethier, M.N., W.W. Raymond, A.N. McBride, **J.D. Toft**, J.R. Cordell, A.S. Ogston, S.M. Heerhartz, and H.D. Berry. 2016. Multiscale impacts of armoring on Salish Sea shorelines: Evidence for cumulative and threshold effects. *Estuarine, Coastal and Shelf Science* 175:106-117.
- David, A.T., P.A.L. Goertler, S.H. Munsch, B.R. Jones, C.A. Simenstad, **J.D. Toft**, J.R. Cordell, E.R. Howe, A. Gray, M.P. Hannam, W. Matsubu, and E.E. Morgan. 2016. Influences of natural and anthropogenic factors and tidal restoration on terrestrial arthropod assemblages in west coast north american estuarine wetlands. *Estuaries and Coasts* 39:1491-1504.
- David, A.T., C.A. Simenstad, J.R. Cordell, **J.D. Toft**, C.S. Ellings, A. Gray, and H.B. Berge. 2016. Wetland loss, juvenile salmon foraging performance, and conspecific density dependence in Pacific Northwest estuaries. *Estuaries and Coasts* 39:767-780.
- Heerhartz, S.M., **J.D. Toft**, J.R. Cordell, M.N. Dethier, and A.S. Ogston. 2016. Shoreline armoring in an estuary constrains wrack-associated invertebrate communities. *Estuaries and Coasts* 39:171-188.
- Munsch, S.H., J.R. Cordell, and **J.D. Toft**. 2015. Effects of seawall armoring on juvenile Pacific salmon diets in an urban estuarine embayment. *Marine Ecology Progress Series* 535:213-229.
- Munsch, S.H., J.R. Cordell, and **J.D. Toft**. 2015. Effects of shoreline engineering on shallow subtidal fish and crab communities in an urban estuary: a comparison of armored shorelines and nourished beaches. *Ecological Engineering* 81:312-320.
- Heerhartz, S.M., and **J.D. Toft**. 2015. Movement patterns and feeding behavior of juvenile salmon (*Oncorhynchus* spp.) along armored and unarmored estuarine shorelines. *Environmental Biology of Fishes* 98:1501-1511.
- Toft, J.D.**, J.R. Cordell, and E.A. Armbrust. 2014. Shoreline armoring impacts and beach restoration effectiveness vary with elevation. *Northwest Science* 88:367-375.
- Munsch, S.H., J.R. Cordell, **J.D. Toft**, E.E. Morgan. 2014. Effects of seawalls and piers on fish assemblages and juvenile salmon feeding behavior. *North American Journal of Fisheries Management* 34:814-827.
- Heerhartz, S.M., M.N. Dethier, **J.D. Toft**, J.R. Cordell, and A.S. Ogston. 2014. Effects of shoreline armoring on beach wrack subsidies to the nearshore ecotone in an estuarine fjord. *Estuaries and Coasts* 37:1256-1268.
- Howe, E.R., C.A. Simenstad, **J.D. Toft**, J.R. Cordell, and S.M. Bollens. 2014. Macroinvertebrate prey availability and fish diet selectivity in relation to environmental variables in natural and restoring North San Francisco Bay tidal marsh channels. *San Francisco Estuary and Watershed Science* 12(1).
- Toft, J.D.**, A.S. Ogston, S.M. Heerhartz, J.R. Cordell, and E.E. Flemer. 2013. Ecological response and physical stability of habitat enhancements along an urban armored shoreline. *Ecological Engineering* 57: 97-108.
- Cordell, J.R., C. Levy, and **J.D. Toft**. 2013. Ecological implications of invasive tunicates associated with artificial structures in Puget Sound, Washington, USA. *Biological Invasions* 15:1303-1318.

- Morley, S.A., **J.D. Toft**, K. Hanson. 2012. Ecological effects of shoreline armoring on intertidal habitats of a Puget Sound urban estuary. *Estuaries and Coasts* 35:774-784.
- G.O. Maier, **J.D. Toft**, and C.A. Simenstad. 2011. Variability in isotopic ($\delta^{13}\text{C}$, $\delta^{15}\text{N}$, $\delta^{34}\text{S}$) composition of organic matter contributing to detritus-based food webs of the Columbia River Estuary. *Northwest Science* 85:41-54.
- Cordell, J.R., **J.D. Toft**, A. Gray, G.T. Ruggerone, and M. Cooksey. 2011. Functions of restored wetlands for juvenile salmon in an industrialized estuary. *Ecological Engineering* 37: 343-353.
- Toft, J.D.**, J.R. Cordell, S.M. Heerhartz, E.A. Armbrust, and C.A. Simenstad. 2010. Fish and invertebrate response to shoreline armoring and restoration in Puget Sound. In Shipman, H., Dethier, M.N., Gelfenbaum, G., Fresh, K.L., and Dinicola, R.S., eds., 2010, Puget Sound Shorelines and the Impacts of Armoring—Proceedings of a State of the Science Workshop, May 2009: U.S. Geological Survey Scientific Investigations Report 2010–5254, p. 161-170.
- Toft, J.D.**, J.R. Cordell, C.A. Simenstad, and L.A. Stamatiou. 2007. Fish distribution, abundance, and behavior along city shoreline types in Puget Sound. *North American Journal of Fisheries Management* 27: 465-480.
- Tomikawa, K., H. Morino, **J. Toft**, and S.F. Mawatari. 2006. A revision of *Eogammarus* Birstein, 1933 (Crustacea, Amphipoda, Anisogammaridae), with a description of a new species. *Journal of Natural History* 40: 1083-1148.
- Toft, J.D.**, C.A. Simenstad, J.R. Cordell, and L.F. Grimaldo. 2003. The effects of introduced water hyacinth on habitat structure, invertebrate assemblages, and fish diets. *Estuaries* 26: 746-758.
- Toft, J.D.**, J.R. Cordell, and W.C. Fields. 2002. New records of crustaceans (amphipoda, isopoda) in the Sacramento/San Joaquin Delta, California, and application of criteria for introduced species. *Journal of Crustacean Biology* 22:190-200.
- Magniez, G., and **J. Toft**. 2000. Présence d'un Asellide épigé originaire d'Extrême-Orient en Californie. *Bulletin mensuel de la Société Linnéenne de Lyon* 69:127-132.
- K. Wasson, B. Von Holle, **J. Toft**, and G. Ruiz. 2000. Detecting invasions of marine organisms: kamptozoan case histories. *Biological Invasions* 2:59-74.

SELECTED TECHNICAL REPORTS (over 50 total)

- Toft, J.D.**, S.H. Munsch, J.R. Cordell, K. Siitari, V.C. Hare, B. Holycross, L.A. Bruyckere, and C.M. Greene. 2015. Nursery functions of West Coast estuaries: data assessment for juveniles of 15 focal fish and crustacean species. Final report to the Pacific Marine and Estuarine Fish Habitat Partnership. 54 pp.
- Cereghino, P., **J. Toft**, C. Simenstad, E. Iverson, S. Campbell, C. Behrens, J. Burke. 2012. Strategies for nearshore protection and restoration in Puget Sound. Puget Sound Nearshore Report No. 2012-01. Published by WDFW, Olympia, Washington, and USACE, Seattle, WA.
- Simenstad, C.A., M. Ramirez, J. Burke, M. Logsdon, H. Shipman, C. Tanner, **J. Toft**, B. Craig, C. Davis, J. Fung, P. Bloch, K. Fresh, D. Myers, E. Iverson, A. Bailey, P. Schlenger, C. Kiblinger, P. Myre, W. Gerstel, and A. MacLennan. 2011. Historical Change of Puget Sound Shorelines: Puget Sound Nearshore Ecosystem Project Change Analysis. Puget Sound Nearshore Report No. 2011-01. Published by WDFW, Olympia, Washington, and USACE, Seattle, WA.
- Cohen, A., C. Mills, H. Berry, M. Wonham, B. Bingham, B. Bookheim, J. Carlton, J. Chapman, J. Cordell, L. Harris, T. Klinger, A. Kohn, C. Lambert, G. Lambert, K. Li, D. Secord, and **J. Toft**. 1998. Puget Sound expedition: a rapid assessment survey of non-indigenous species. DNR Technical Report.

WEBSITE DEVELOPMENT

- Shoreline Monitoring Database: shoremonitoring.org
 Shoreline Monitoring Toolbox: wsg.washington.edu/toolbox

CERTIFICATES

- DNR Boat Operation and Boating Safety; Red Cross First Aid and CPR; NAUI Openwater I SCUBA

INVITED COMMITTEE/VOLUNTEER (SELECTED)

- Estuary and Salmon Restoration Program (ESRP) Beach Strategies steering committee (2018-current); Pacific Marine and Estuarine Fish Habitat Partnership (PMEP) nearshore marine working group (2018-current); Board member of Conservation, Research and Education Opportunities International (CREOI) (2014-2019); Urban shorelines advisory committee, New York–New Jersey Harbor & Estuary

Program (2014-15); Crustacean collector in Sakhalin Island, Russia (2002); Playing in music groups for various benefits.