Curriculum Vitae: Robert William Campbell

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Nationality:	Canadian
Immigration status:	Permanent resident
Date of Birth:	September 28, 1972

EDUCATION

Doctor of Philosophy
Sept. 2001-Dec 2003: University of Victoria, School of Earth and Ocean Sciences
1999-Sept. 2001: University of British Columbia, Dept. of Earth and Ocean Sciences
Thesis: "Overwintering ecology of *Neocalanus plumchrus*"
Supervisor: Dr. John F. Dower

1996-1998 Master of Science, Biology, Dalhousie University.
Thesis: "Reproduction of *Calanus finmarchicus* in the western North Atlantic: fecundity and hatching success"
Supervisors: Dr. Erica J. H. Head (Dept. of Fisheries and Oceans) and Dr. Ian A. McLaren (Dalhousie University)

1991-1996 Bachelor of Science (Hons), Biology, University of Toronto.
Thesis: "Simulation and bioenergetic modeling of Walleye (*Stizostedion v. vitreum*) populations in small boreal lakes"
Supervisor: Dr. W. Gary Sprules

RELATED EMPLOYMENT

2007-present	Oceanographer Prince William Sound Science Center, Cordova, Alaska
2010-present	Affiliate Faculty, Biology Dept., University of Alaska Anchorage
2008-present	Instructor, Prince William Sound Community College Course title: Oceanography of Prince William Sound (2008-2009), Ocean Science and Leadership Expedition (2010)
2004-2006	Postdoctoral Researcher Institut für Hydrobiologie und Fischereiwissenschaft, Universität Hamburg
2003	Contractor, Consultant to Parks Canada.
2002-2003	Teaching Assistant, University of Victoria. •Biological/Chemical Oceanography (3rd year undergraduate course)

2000-2002	Teaching Assistant, University of British Columbia. •Aquatic Ecology (4th year undergraduate course) •Introduction to Biological and Geological Oceanography (3rd year) •Methods in Oceanography (4th year/graduate course)
1996-1998	Teaching Assistant, Dalhousie University. •Ecology (2nd year undergraduate lab) •Marine Diversity (2nd year undergraduate lab) •Nature Conservation (3rd year undergraduate tutorial)
1996	Research Assistant (to W. Gary Sprules), University of Toronto
1994/1995	Technician, Walleye Rotational Fishing Experimental Management Project, Ontario Ministry of Natural Resources, Gogama District

PUBLICATIONS

Arimitsu, M., Piatt, J., Hatch, S., Suryan, R.M., Batten, S., Bishop, MA, Campbell, R.W., Coletti, H., Cushing, D., Gorman, K., Hopcroft, R., Kuletz, K.J., Marsteller, C.M., McKinstry, C., McGowan, D., Moran, J., Pegau, W.S., Schaefer, A., Schoen, S., Straley, J. and V.R. von Biela. 2021. Heatwave-induced synchrony within forage fish portfolio disrupts energy flow to top pelagic predators. Global Change Biol. 27:1859–1878 doi:10.1111/gcb.15556

Suryan, R.M., Arimitsu,M.L., Coletti, H.A., Hopcroft, R.R., Lindeberg, M.R., Barbeaux, S.J., Batten, S.D., Burt, W.J., Bishop, MA, Bodkin, J.L., Brenner, R., **Campbell, R.W.**, Cushing, D.A., Danielson, S.L., Dorn, M.W., Drummond, B., Esler,D., Gelatt, T., Hanselman, D.H., Hatch, S.A., Haught, S., Holderied, K., Iken, K., Irons, D.B., Kettle, A., Kimmel, D.G., Konar, B., Kuletz, K.J., Laurel, B.J., Maniscalco, J.M., Matkin, C., MckKinstry, C.A.E., Monson, D.H., Moran, J.R., Olsen,D., Palsson, W.A., Pegau, W.S., Piatt, J.F., Rogers, L.A., Rojek, N., Schaefer, A., Spies,I.B., Straley, J.M., Strom, S.L., Sweeney, K.L., Szymkowiak, M., Weitzman, B.P., Yasumiishi, E.M. and S.G. Zador. 2021. Ecosystem response persists after a prolonged marine heatwave. Sci. Rep. 11:6235. doi: 10.1038/s41598-021-83818-5

Campbell, R.W., Roberts, P.L. and J. Jaffe. 2020. The Prince William Sound Plankton Camera: a profiling in situ observatory of plankton and particulates. ICES J. Mar. Sci. doi:10.1093/icesjms/fsaa029.

Connors, B., Malick, M.J., Ruggerone, G.T., Rand, P., Adkison, M., Irvine, J., **Campbell, R.W**. and K. Gorman. 2020. Climate and competition influence sockeye salmon population dynamics across the Northeast Pacific Ocean. Canadian Journal of Fisheries and Aquatic Sciences. doi: 10.1139/cjfas-2019-0422

Tomco, P.L., Zulueta, R.C., Miller, L.C., Zito, P.A., **Campbell, R.W.** and J.M. Welker. 2019. DOC export is exceeded by C fixation in May Creek: A late successional watershed of the Copper River Basin, Alaska. PLoS ONE 14(11): e0225271. doi: 10.1371/journal.pone.0225271

Campbell, R.W. 2018. Hydrographic trends in Prince William Sound, Alaska, 1960–2016. Deep Sea Res. doi: 10.1016/j.dsr2.2017.08.014

McKinstry, C.A.E., and **R.W. Campbell**. 2018. Seasonal variation of zooplankton abundance and community structure in Prince William Sound, Alaska, 2009–2016. Deep Sea Res. doi: 10.1016/j.dsr2.2017.08.016

Crusius, J., Schroth, A.W., Resing, J.A., Cullen, J. and **R.W. Campbell**. 2017. Seasonal and spatial variabilities in the northern Gulf of Alaska surface water iron concentrations

driven by shelf sediment resuspension, glacial meltwater, a Yakutat eddy, and dust. Global Biogeochemical Cycles. Doi: 10.1002/2016GB005493

Schroth, A.W., Crusius, J., Gassó, S., Moy, C.M., Buck, N.J., Resing, J.A. and **R.W. Campbell**. 2017. Atmospheric deposition of glacial iron in the Gulf of Alaska impacted by the position of the Aleutian Low. Geophys. Res. Lett. 44, doi:10.1002/2017GL073565.

Batten, S.D., Moffitt, S., Pegau, W.S. and **R. Campbell**. 2016. Plankton indices explain interannual variability in Prince William Sound herring first year growth. Fisheries Oceanography 25:420-434. doi: 10.1111/fog.12162

Schroth, A.W., Crusius, J., Hoyer, I. and **R. Campbell**. 2014. Estuarine removal of glacial iron and implications for iron fluxes to the ocean. Geophysical Research Letters. doi: 10.1002/2014GL060199

Mackas, D., Galbraith, M., Faust, D., Masson, D., Young, K., Shaw, W., Romaine, S., Trudel, M., Dower, J., **Campbell, R**., Sastri, A., Bornhold Pechter, E.A., Pakhomov, E. and R. El-Sabaawi. 2012. Zooplankton time series from the Strait of Georgia: Results from year-round sampling at deep water locations, 1990-2010. Prog. Oceanogr. 115:129-159.

Head, E.J.H., Harris, L.R., Ringuette, M. and **R. Campbell**. 2012. Characteristics of egg production of the planktonic copepod, Calanus finmarchicus, in the Labrador Sea: 1997B2010. Journal of Plankton Research. doi: 10.1093/plankt/fbs097.

Acheampong E, **Campbell RW**, Diekmann ABS, St John MA. 2011. Food availability effects on reproductive strategy: the case of Acartia tonsa (Copepoda: Calanoida). Mar. Ecol. Prog. Ser. 428:135-149.

Diekmann, A.B.S., Holste, L., St. John, M., Peck, M and **R.W. Campbell**. 2009.Variation in diatom biochemical composition during a simulated bloom and its effect on copepod reproduction. J. Plankton Res. 31:1391-1405

Campbell, R.W. 2008. Overwintering habitat of *Calanus finmarchicus* in the North Atlantic inferred from autonomous profiling floats. Deep Sea Res. 55:630-645.

Campbell, R.W and J.F. Dower. 2008. Life history and depth distribution of *Neocalanus plumchrus* in the Strait of Georgia. J. Plankton Res. 30:7-20.

Kattner, G., Hagen, W., Lee, R.F., **Campbell, R.W.**, Deibel, D., Falk-Petersen, S., Graeve, M., Hansen, B.W., Hirche, H.J., Jonasdottir, S.H., Madsen, M.L., Mayzaud, P., Müller-Navarra, D., Nichols, P., Paffenhöffer, G.A., Pond, D., Saito, H., Stübing, D., and P. Virtue. 2007. Perspectives on zooplankton lipids. Can. J. Fish. Aquat. Sci. 64:1628-1639.

Campbell, R.W., Boutillier, P. and J.F. Dower. 2004. Ecophysiology of overwintering in the copepod *Neocalanus plumchrus*: Changes in lipid and protein contents over a seasonal cycle. Mar. Ecol. Prog. Ser. 280:211-226.

Campbell, R.W. 2004. Comments on "Some ideas about the role of lipids in the life cycle of *Calanus finmarchicus* ". J. Plankton Res. 26:979-980.

Campbell, R.W. and J.F. Dower. 2003. The role of lipids in the regulation of buoyancy by zooplankton. Mar. Ecol. Prog. Ser. 263:93-99.

Irigoien, X., Harris, R.P., Verheye, H.M., Joly, P., Runge, J.A., Starr, M. Pond, D., **Campbell, R.W.**, Shreeve, R., Ward, P., Smith, A.N., Dam, H.G., Napp, J., Peterson, W., Tirelli, V., Koski, M., Smith, T., Harbour, D., Strom, S. and R. Davidson. 2002. Copepod Hatching Success Rate in Marine Ecosystems With with High Diatom Concentrations - the Paradox of Diatom-Copepod Interactions Revisited. Nature. 419:387-389.

Campbell, R.W. and E.J.H. Head. 2000. Egg production rates of *C. finmarchicus* in the western North Atlantic: effect of gonad maturity, female size, chlorophyll concentration and temperature. Can. J. Fish. Aquat. Sci. 57:518-529.

Campbell, R.W. and E.J.H. Head. 2000. Viability of *Calanus finmarchicus* eggs in situ: does intact phytoplankton reduce hatching success? ICES J. Mar. Sci. 57:1780-1785

Head, E.J.H., Harris, L.R. and **R.W. Campbell.** 2000. Investigations on the ecology of *Calanus* spp. In the Labrador Sea. I. Relationship between the phytoplankton bloom and reproduction and development of *Calanus finmarchicus* in spring. Mar. Ecol. Prog. Ser. 193:53-73.

Non-refereed publications:

Campbell, R.W., Nielsen, M.H., and A. Temming. 2006. Mesoscale plankton distributions across a tidal front in the Southeastern North Sea. GLOBEC International Newsletter, April 12:65-66.

Campbell, R.W., Horner-Devine, M.C., Lartigue, J. and G.C. Rollwagen Bollens. 2005. Preparing for an academic job interview: Compilation of frequently asked questions. Report from DIALOG VI meeting 2004: http://aslo.org/phd/reports/interviewhints.pdf

Campbell, R.W., M. Boersma, J. Dower, G. Muller-Parker and C.S. Weiler, 2005. In pursuit of the perfect letter of reference. Report from DIALOG VI meeting 2004: http://www.disccrs.org/reports/referenceletters.html

Campbell, R.W. 2002. Summary of Life History Information on Larval Marine Fish and Invertebrates: Queen Charlottes Region. Manuscript report submitted to Parks Canada.

PRESENTATIONS

Campbell, R.W. 2021. Impacts of the recent marine heat waves on the oceanography and plankton ecosystem of Prince William Sound. Alaska Marine Science Symposium, online.

Arimitsu, M., Piatt, J., Hatch, S., Suryan, R., Batten, S., Bishop, M-A., **Campbell, R.W**., Coletti, H., Cushing, D., Gorman, K., Hopcroft, R., Kuletz, K., Marsteller, C., McKinstry, C., McGowan, D., Moran, J., Pegau, S., Schaefer, A., Schoen, S., Straley, J. and V. von Biela. 2021. Heatwave-induced synchrony within forage fish portfolio disrupts energy flow to top pelagic predators. Alaska Marine Science Symposium, online.

Dias, B.S., McGowan, D.W., **Campbell. R.W.** and T.A. Branch. 2021. What affects spawning phenology of herring (*Clupea pallasii*) in Prince William Sound? Alaska Marine Science Symposium, online.

Du., X., **Campbell, R.W.,** Kibler, S., and B. Wright. 2021. Seasonal dynamics of the harmful dinoflagellate *Alexandrium* and associated paralytic shellfish toxin contamination in shellfish: NPRB 1801 project updates for Prince William Sound. Alaska Marine Science Symposium, online.

Renner, M., Holderied, K., McKinstry, C., Hondolero, D., and **R.W. Campbell.** 2021. Is it spring yet? Seasonal clusters of phyto- and zooplankton communities in Kachemak Bay and Lower Cook Inlet. Alaska Marine Science Symposium, online.

Campbell, R.W., Roberts, P.L. and J. Jaffe. 2020. The Annual Secondary Productivity Cycle in Prince William Sound Measured with the Prince William Sound Plankton Camera. ASLO Ocean Sciences Meeting, San Diego.

Campbell, R.W., Roberts, P.L. and J. Jaffe. 2020. The Annual Secondary Productivity Cycle in

Prince William Sound Measured with the Prince William Sound Plankton Camera. Alaska Marine Science Symposium, Anchorage.

Kibler, S., Wright, B., Du, X., **Campbell, R.W.**, Holderied, K., Hondolero, D., Masui, R., Guo, C., and C. Walker. 2020. NPRB 1801 - Prevalence of Paralytic Shellfish Toxins in the Marine
Food Web of Southcentral and Southwest Alaska: Year 1 Update. Alaska Marine Science Symposium, Anchorage.

Campbell, R.W., Jaffe, J., and P. Roberts. 2019. The PWS Plankton Cam: An In-situ Look Into the Zooplankton Ecosystem of Prince William Sound. Alaska Marine Science Symposium, Anchorage.

Kibler, S., Du, X., **Campbell, R.W.**, Holderied, K., Hondolero, D., Powell Schuster, K., Robinson, R., Arimitsu, M. and J. Piatt. 2019. NPRB 1801: Prevalence of Paralytic Shellfish Toxins in the Marine Food Webs of Prince William Sound and Kachemak Bay, Alaska. Alaska Marine Science Symposium, Anchorage.

Campbell, R.W. 2018. A Profiling Observatory for High Resolution Oceanographic, Biogeochemical, and Plankton Observations in Prince William Sound. ASLO Ocean Sciences Meeting, Portland.

Crusius, J., Schroth, A.W., Gasso, S, and **R.W. Campbell**. 2018. "Gap" winds through mountainous topography dominate offshore winds along the curved coastline of southern Alaska, influencing transport of dust-derived Fe as well as Fe from upwelling and eddies. ASLO Ocean Sciences Meeting, Portland.

McKinstry, C. and **R.W. Campbell**. 2018. Seasonal variation of zooplankton abundance and community structure in Prince William Sound, Alaska, 2009-2016. ASLO Ocean Sciences Meeting, Portland.

Michael, S.M., Crusius, J. Schroth, A.W. **Campbell, R.W.** and J.A. Resing. 2018. Examining Sediment Redox Control of the Flux of Iron to Northern Gulf of Alaska Surface Waters. ASLO Ocean Sciences Meeting, Portland.

Campbell, R.W. 2018. A Profiling Observatory for High Resolution Oceanographic, Biogeochemical, and Plankton Observations in Prince William Sound. Alaska Marine Science Symposium, Anchorage.

Campbell, R.W. 2017. Early Season Salmon Sonar in the Lower Copper River Delta. PWSSC Lecture Series, Cordova.

Campbell, R.W. 2017. Effects of the 2013-2016 warm anomaly in Prince William Sound, Alaska. Alaska Marine Science symposium, Anchorage.

Campbell, R.W. 2016. Surface layer and bloom dynamics observed with the Prince William Sound Autonomous Profiler. ASLO/AGO Ocean Sciences Meeting, New Orleans.

Campbell, R.W. 2016. Surface layer and bloom dynamics in Prince William Sound. Alaska Marine Science Symposium, Anchorage.

Campbell, R.W. 2016. Effects of the 2013-2015 warm anomaly in Prince William Sound, Alaska. Pacific Anomalies Workshop 2, Seattle.

Campbell, R.W. 2015. State of the Sound: Oceanography, surface layer dynamics, and plankton blooms in PWS. PWSSC Lecture series, Cordova.

Campbell, R.W. 2015. Oceanography, surface layer dynamics, and plankton blooms in PWS. PWS Regional Citizens' Advisory Council, Anchorage.

Campbell, R.W. 2015. State of the Sound: Oceanography, surface layer dynamics, and plankton blooms in PWS. PWSSC Pub Talk, Cordova.

Campbell, R.W. 2015. Recent trends in the oceanography of Prince William Sound. Alaska Marine Science Symposium, Anchorage.

Campbell, R.W., Crusius, J., Schroth, A., Gasso, S and J. Welker. 2014. Ice sheets to oceans: linkages between the Copper River and the northern Gulf of Alaska. American Water Resources Association AK chapter annual meeting, Juneau.

Campbell, R.W., Crusius, Gasso, S., Thomas, A. and A.W. Schroth. 2014 Ice Sheets to Oceans: Linkages between changing watersheds and the northern Gulf of Alaska. ASLO/AGU/TOS Ocean Sciences Meeting, Honolulu.

Crusius, J. (speaker), Schroth, A.W., **Campbell, R.W.**, Gasso, S., 2014. Sources of the micronutrient iron to the Gulf of Alaska, including the contribution of glacial flour-derived dust, Alaskan Marine Science Symposium, Anchorage, AK.

Crusius, J. (speaker), Schroth, A.W., **Campbell, R.W.**, Gasso, S. and J. Resing. 2014. The contribution of glacial flour-derived dust fluxes to the iron budget of the Northern Gulf of Alaska. ASLO/AGU/TOS Ocean Sciences Meeting, Honolulu.

Campbell, R.W. 2014. State of the Sound: Trends in the surface oceanography of Prince William Sound. Alaska Marine Science Symposium, January 2014.

Crusius, J. (speaker), Schroth, A.W., **Campbell, R.W.**, Resing, J., Gasso, S., 2014. Workshop on High Latitude and Cold Climate Dust Network (invited). Loughborough University, UK.

Crusius, J. (speaker), Schroth, A.W., **Campbell, R.W.**, Gasso, S., Cullen, J., Resing, J., Quay, P.D., Munro, D., 2013 Iron and Nitrate Supply on the Northern Gulf of Alaska Continental Shelf and Slope and their Influence on Primary Productivity, 4th NACP All-Investigators Meeting, Albuquerque, NM.

Schroth, A.W. (speaker), Crusius, J., **Campbell, R.W.**, Gasso, S., and C.M. Moy. 2013. Dynamic Aeolian Deposition of Glacial Iron to the Open Ocean: 2 Years of Time-Series Observations from Middleton Island and the Copper River Delta. AGU Fall Meeting, San Francisco.

Campbell, R.W., Crusius, J. and A. Schroth. 2012. Linking melting ice to variability in the Copper River plume and coastal Gulf of Alaska. ASLO Ocean Sciences Meeting, Salt Lake City.

McFadden, L.F., **Campbell, R.W.**, Causey, D. and J. Welker. 2012. Distribution and ecology of zooplankton and juvenile pelagic fishes in the Copper River plume. ASLO Ocean Sciences Meeting, Salt Lake City.

Campbell, R.W. 2012. State of the Sound: Recent oceanographic conditions in Prince William Sound. Alaska Marine Science Symposium, Anchorage.

Crusius, J. (speaker), Schroth, A.W., **Campbell, R.W.**, Cullen, J.T., Dillman, D. and J.A. Resing. 2012. Seasonal Control of Surface-Water Dissolved Iron Concentrations by Suspended Particle Concentrations on the Northern Gulf of Alaska Continental Shelf and Slope. AGU Fall meeting, Dec. 2012.

Crusius, J. (speaker), Schroth, A. W., Gasso, S., Buck, N., Resing, J., and **Campbell, R. W**., 2012. Glacial Flour Dust Storms Transport Bioavailable Fe to the Gulf of Alaska.Surface Ocean - Lower Atmosphere (SOLAS) Open Science Conference, Cle Elum, WA. May 2012.

Cullen, K. (speaker), Thomas, A. and **R. Campbell.** 2012. Temporal and spatial variability of chlorophyll and turbidity on the Alaska shelf: links to dominant forcing. Eastern Pacific Oceanographic Conference, Timberline, OR.

Gassó, S (speaker).,Crusius, J., Schroth, A. W., **Campbell, R.**, Levy, R., Wang,.J. 2012.

Transport and Deposition of Alaskan Dust into the Gulf of Alaska and Comparison with Similar High Latitudes Dust Environments. Surface Ocean - Lower Atmosphere (SOLAS) Open Science Conference, Cle Elum, WA. May 2012

Gassó, S (speaker).,Crusius, J., Schroth, A. W., **Campbell, R.**, Levy, R., Wang,.J. 2012. Case studies of Aerosol Transport in High Latitude Dust Environments. Aerosol Update Forum, Goddard Space Flight Center, Greenbelt, MD. June 2012

Schroth, A.W. (speaker), Crusius, J., **Campbell, R.W.**, Osburn, C.L., and I. Hoyer. 2012. Seasonal fluctuation and estuarine removal of glacially-derived iron fluxes to the Gulf of Alaska. AGU Fall Meeting, San Franciso.

Thomas, A.(speaker), **Campbell, R.**, Crusius, J., Welker, J., Schroth, A., Gassó, S., Zulueta, R., Tomco, P., Cullen, K. and R. Weatherbee, 2012. Melting Ice, Habitat Change, and Nutrient Flux: Hydrological, Biogeochemical and Biological Linkages Between the Copper River Watershed and the Coastal Gulf of Alaska. NASA Ocean Color Research Team Meeting, April 23-25, Seattle, WA.

Campbell, R.W., Schroth, A. and J. Crusius. 2011. Seasonal Changes in Productivity in the Copper River Plume and Coastal Gulf of Alaska. Alaska Marine Science Symposium, Anchorage.

Campbell, R.W., Schroth, A. and J. Crusius. 2010. Seasonal changes in productivity in the Copper River plume and coastal Gulf of Alaska. AGU Fall Meeting, San Francisco.

Campbell, R.W. 2010. Overwintering habitat of Calanus finmarchicus in the North Atlantic inferred from autonomous profiling floats. ASLO Ocean Sciences meeting, Portland.

Crusius, J. (speaker), Schroth, A.W., **Campbell, R.W.**, Nielsen, J.L., Hoyer, I. and W. Brooks. 2010. Abundant, seasonally variable supply of glacier flour-derived iron drives high nitrate consumption in Copper River plume and adjacent Gulf of Alaska continental shelf. AGU Fall Meeting, San Francisco.

Shi, L. (speaker), Chai, F., Chao, Y., Farrara, J., and **R.W. Campbell**. 2010. Physical-Biological Modeling for the Prince William Sound, Alaska. ASLO Ocean Sciences meeting, Portland.

Koch, C.R. (speaker), Wetzel, C., Zaneveld, J.R., Gregory, T.K., Pennock, J.R., Ragan, M., Jones, B.H., **Campbell, R.W.**, Needoba, J.A., Egli, P.J., Hanson, A.K., and A.H. Barnard. 2010. CYCLE-PO4: an in-situ instrument for high temporal resolution phosphate measurements over long deployments. ASLO Ocean Sciences meeting, Portland.

Campbell, R.W., Chai, F. and Y. Chao. 2009. An empirical test of an NPZ model during the 2009 AOOS observing system experiment. Eastern Pacific Oceanography Conference, Sidney.

Campbell, R.W., Siwicke, K., Gates, H.R., Lindsley, A.J. and T. Kline. 2008. Plankton distributions in Prince William Sound and the Coastal Gulf of Alaska, 2007. Alaska Marine Science Symposium.

Campbell, R.W. Nielsen, M.H. and K. Möller**.** 2007. Mesoscale distributions of plankton in the North Sea in relation to fronts. ICES/PICES Early Career Scientists Conference, Baltimore.

Campbell, R.W. Nielsen, M.H. and K. Möller. 2007. Meso- to small-scale distributions of plankton and marine snow in the southeastern North Sea in relation to fronts. ICES/PICES/GLOBEC 4th Zooplankton Production Symposium, Hiroshima.

Frost, J.R (speaker)., Jacoby, C.A., Gust, G., Nielsen, M.H., and **R.W. Campbell**. 2007.

Behavioural and biochemical effects of hydrostatic pressure changes on Acartia tonsa (Dana, 1848) (Copepoda: Calanoida): a methodological approach. ICES/PICES/GLOBEC 4th Zooplankton Production Symposium, Hiroshima.

Campbell, R.W., Nielsen, M.H. and A. Temming. 2006. Mesoscale plankton distributions across a tidal front in the Southeastern North Sea. ASLO/AGU/TOS Ocean Sciences Meeting, Honolulu.

Campbell, R.W. 2005. The ups and downs of a copepod: Vertical distributions of *Neocalanus plumchrus* in the Strait of Georgia. ASLO Summer Meeting, Santiago de Compostela, Spain.

Campbell, R.W. 2004. The ups and downs of a plankter: Overwintering in Neocalanus plumchrus. ASLO DIALOG VI symposium, Dauphin Island.

Campbell, R.W. 2004. Enzyme assays as rate proxies: Review and critique (invited). ICES Working Group Zooplankton Ecology meeting, Hamburg.

Campbell, R.W. and J.F. Dower. 2003. Experimental simulation of the termination of overwintering in *Neocalanus plumchrus*. GLOBEC/PICES/ICES 3rd International Zooplankton Production Symposium, Gijon, Spain

Campbell, R.W. and J.F. Dower. 2002. Depth distributions of overwintering copepods: the role of buoyancy regulation. 2002 ASLO Summer meeting, Victoria.

Campbell, R.W. and M.E. Huntley. 2002. Mesoscale distributions of lipids in the copepods of the California Current. ASLO/AGU Ocean Sciences meeting. Honolulu.

Thibault-Botha, D. (speaker), Huntley, M. and **R.W. Campbell**. 2002. Potential impact of copepods and ctenophores on the structure of the food web in the North Pacific Ocean in summer 2000 and 2002. ASLO/AGU Ocean Sciences meeting. Honolulu.

Campbell, R.W. and J.F. Dower. 2001. Lipids, buoyancy and life history: The depth distribution of overwintering *Neocalanus* spp. in the eastern North Pacific. 2001 PICES meeting, Victoria.

Campbell, R.W. and J.F. Dower. 2001. An equation of state for a copepod: the depth distribution of overwintering Neocalanus plumchrus in the Strait of Georgia, British Columbia, Canada. 2001 ASLO Aquatic Sciences Meeting, Albuquerque.

Campbell, R.W. 2000. Copepodology 101. St. John's College Seminar Series [invited], University of British Columbia.

Campbell, R.W. and E.J.H. Head. 1999. Viability of Calanus finmarchicus eggs in situ: do intact diatoms reduce hatching success? ICES Symposium (Population Dynamics of Calanus in the North Atlantic), Tromsø, Norway.

Head, E. (speaker), Harris, L. and **R. Campbell.** 1999. Relationship between the phytoplankton bloom and reproduction and development of Calanus finmarchicus in the Labrador Sea in Spring. ICES Symposium (Population Dynamics of Calanus in the North Atlantic), Tromsø, Norway.

Campbell, R.W. and E.J.H. Head. 1999. Reproduction of Calanus finmarchicus in the Western North Atlantic: Fecundity and Hatching Success. GLOBEC 99 Science Meeting, Halifax.

Head, E. (speaker), Harris, L. and **R. Campbell**. 1999. Springtime sources of Calanus finmarchicus to the Scotian Shelf. GLOBEC 99 Science Meeting, Halifax.

Head, E. (speaker), Harris, L. and **R. Campbell.** 1998. On the ecology of Calanus spp. in the Labrador Sea. 32nd Annual CMOS Congress, Halifax.

Campbell, R.W. and E.J.H. Head. 1998. Egg production rates for Calanus finmarchicus in

the Labrador Sea and across the Scotian Shelf. GLOBEC 98 Science Meeting, Vancouver.

Campbell, R.W. and E.J.H. Head. 1998. [poster] Egg production rates of Calanus finmarchicus in the northwest Atlantic. ASLO/AGU Ocean Sciences 98 meeting, San Diego.

DATASETS

Campbell, R.W. 2015. High frequency observations of the secondary production cycle in Prince William Sound from 2016-2018. doi: 10.24431/rw1k582

FUNDED RESEARCH

Term	Title	Funding agency	Amount
2022-2032	Gulf Watch Alaska: Long-term monitoring of oceanographic conditions in Prince William Sound	Exxon Valdez Oil Spill Trustee Council	$2798K
2020-2022	Development and testing of an in situ imaging and identification system for the assessment of fish passage in small streams.	NOAA Saltonstall-Kennedy	$294K
2019-ongoing	Port Valdez Weather Buoys	Prince William Sound Regional Citizens' Advisory Council.	~$30K annually
2019-2023	Prevalence of Paralytic Shellfish Toxins in the Marine Food Webs of Prince William Sound and Kachemak Bay	North Pacific Research Board	$92K
2018-2019	Sonar weir in the lower Copper River to enumerate early run salmon for in-season management	NOAA Saltonstall-Kennedy	$121K
2017-2021	Gulf Watch Alaska: Long-term monitoring of oceanographic conditions in Prince William Sound	Exxon Valdez Oil Spill Trustee Council	$1142K
2016-present	Lower Copper River delta sonar deployment to improve Imaging sonar deployment in the lower Copper River to enhance early season management	Copper River / Prince William Sound Marketing Association	$50-60K annually
2016-2019	High frequency observations of the secondary production cycle in Prince William Sound	North Pacific Research Board	$446K

2015	Nutrient auto-analyzer to test water samples	Rasmuson Foundation	$25K
2011-2016	Long term monitoring of marine conditions and injured resources and services: Long term monitoring of oceanographic conditions in Prince William Sound	Exxon Valdez Oil Spill Trustee Council	$1042K
2010-2013	Melting ice, habitat change and nutrient flux: Hydrological, biogeochemical and biological linkages between the Copper River watershed and the coastal Gulf of Alaska	NASA	$1388K
2010-2013	Impacts of climate change and melting glaciers on coastal ecosystems in the nearshore waters of the Gulf of Alaska	US Geological Survey	$615K
2009-2013	PWS herring survey: Plankton and oceanographic observations.	Exxon Valdez Oil Spill Trustee Council	$599K
2009-2010	An empirical test of an NPZ model during the 2009 AOOS observing system experiment	Oil Spill Recovery Institute	$25K
2009-2010	Development of a new portable oceanographic winch system	Rasmuson Foundation	$15K
2009-2011	Prince William Sound Observing System	Alaska Ocean Observing System (NOAA)	$583K
2009-2010	Planning workshop for a research and socioeconomic review and synthesis on Prince William Sound.	Oil Spill Recovery Institute	$25K
2008-2011	Comparison of long-term laboratory estimates of fecundity of Euphausia pacifica from the Gulf of Alaska and the northern California Current	North Pacific Research Board	$5K
2008-2011	Long-term in situ chemical sensors for monitoring nutrients: phosphate sensor commercialization and ammonium sensor development	National Science Foundation, National Oceanographic Partnership Program	$30K
2008-2010	Nearshore biophysical moorings	Alaska Ocean Observing System (NOAA)	$50K
2007-2008	Pilot nearshore biophysical mooring in Port San Juan	Alaska Ocean Observing System (NOAA)	$25K

ACADEMIC AWARDS

1996-1998	Dalhousie Scholarship
1999-2000	Sir Quo-Wei Lee Fellowship
2000-2002	University of British Columbia Graduate Fellowship
2002	University of Victoria Excellence Recruitment Award
2002-2003	University of Victoria Graduate Fellowship
2003	Captain Wilfred T. Gagnon & Mrs. M. Emma Gagnon Memorial Scholarship
Jan. - June 2004	Deutscher Akademischer Austauschdienst Stipendium
2004-2005	National Sciences and Engineering Research Council of Canada International Postdoctoral Fellowship

RESEARCH SKILLS/EXPERIENCE

Field experience

- •Assessment of fish, plankton, and benthic populations (seining, trawling, gill- and trap-netting; plankton nets, trawls, traps, pumps and bottles; benthic grabs, dredges, corers, and drift [e.g. surber] style samplers).
- •Small boat experience (several hundred hours), CCG Operators Card, Canadian Power & Sail Squadron training, Radio operator=s license.
- •Cruise participation: Lake Ontario/Lake Erie Trophic Transfer (CCGS Limnos, 1996); GLOBEC Canada (CCGS Hudson 96010, 97003; CCGS Parizeau 96028), WOCE (CCGS Hudson 97009), US GLOBEC NEP (R/V New Horizon NH0005 NH0007), Line P (CCGS John P. Tully 00025, 01029), GLOBEC Germany (F/S Alkor AL257 and AL260, 2005). CCGS Vector (01013, 01039), CCGS Ricker (00004), R/V Wakataka-Maru (Sea of Okhotsk, 2001), R/V Caligus, R/V Walker Rock and R/V Royal Bounty (numerous, 1999-2003). Currently responsible for the maintenance and operation of the M/V New Wave, a 39' aluminum high speed research vessel owned by the PWS Science Center (~40 days/year sea time).

Electronic data collection

- •Maintenance and deployment of standard oceanographic instrumentation (Guildline, Seabird, Hydrobios and FSI CTDs, FSI and AANDERAA oxygen meters, Inter-oceans S4 current meters, Biospherical light sensors, TriOS spectral radiometer, Satlantic SUNA nitrate analyser).
- •Maintenance and deployment of a WETLabs Thetis-based profiling mooring
- •Maintenance, calibration and deployment of Biosonics echosounders
- •Maintenance, calibration and deployment of optical instrumentation (Focal Technologies Optical Plankton Counter [OPC], SeaScan Video Plankton recorder [VPR], fluorometers, turbidometers). Collaborated with engineers from Vision To Technology (V2T) GmbH on the design and build of a 3D plankton imaging system.
- •Maintenance, repair, calibration and operation of a Beckman Coulter Multisizer 3 particle counter.
- •Designed and built a PC-based data logging system capable of submersion to 3000 meters along with an oceanographic instrument package for profiling and towed applications.
- •Deployment and maintenance of satellite telemetered nearshore moorings and cellular telemetered buoys

Analytical Chemistry

- •CHN
- •Gas/liquid/thin-layer chromatography (Iatroscan TLC/FID analysis of lipids; GC analysis of fatty acid methyl esters).
- •wet chemistry (spectrophotometry/fluorometry: inorganic nutrients, protein, carbohydrate, RNA/DNA, chlorophyll).

Computer Skills

- •Familiar with PC Hardware, have built several systems for data logging and other purposes.

•Familiar with common scientific PC Software (MS Office, SYSTAT, MINITAB, SigmaPlot, STELLA, Surfer).

•Extensive experience programming in MATLAB, have written programs for: the processing and analysis of CTD, OPC, VPR, Argo float, Biosonics echosounder and GC (Agilent 6890N) data; distribution-free spatial statistics; modeling of vertical position and sinking rates of plankton and other particulates; GUI-based image identification.

•Developed automated machine vision routines to classify plankton images using deep neural nets, implemented in Python/Tensorflow

Data/Statistical Analysis

•Inferential and multivariate statistics

•Model fitting

•Spatial and distribution-free statistics

EXTRACURRICULAR AND OUTREACH ACTIVITIES

2020 – present	Board Member, Cordova Electric Cooperative
2015	Speaker, PWSRCAC Science Night
2007 – present	Speaker, PWSSC Seminar series (annually)
2008-2010	Science Judge, Ocean Sciences Bowl, Seward AK.
2007	Judge, Cordova Science Fair
2002-2003	Departmental Graduate Student Representative, University of Victoria, School of Earth and Ocean Sciences
2002-2003	Member, University of Victoria Speakers Bureau (http://communications.uvic.ca/sb/)
2002	Judge, Vancouver Island regional science fair
2000-2002	Member, Organizing committee, UBC Graduate Student Symposium in Oceanography
1998-present	Member, MAD Scientist Network (www.madsci.org)
2000-present	Moderator, MAD Scientist Network
2001	Speaker, UBC Career Fair (Symposium for 1st year students)
1999/2001	Judge, Vancouver Regional Science Fair
1999-2001	Councillor, Graduate Student Society, University of British Columbia
1998	Councillor, Dalhousie Association of Graduate Students, Dalhousie University
1997-1998	Vice President, Biology Organization of Graduate Students, Dalhousie University

PROFESSIONAL SOCIETY MEMBERSHIP/PROFESSIONAL SERVICE

Member, PICES working group on monitoring plankton with imaging systems (2020-present)

Member, Association for the Sciences of Limnology and Oceanography (1998-present)

2007-present: Member-at-large, Education and Human Resource Image Library Subcommittee

Member, International Council for the Exploration of the Sea (Working Group Zooplankton Ecology, 2004-present)

Member, Exxon Valdez Trustee Council Integrated Herring Restoration Plan Working Group.
Proposal Reviewer: National Science Foundation, Deutsche Forschungsgemeinschaft.
Report Reviewer: Exxon Valdez Trustee Council
Manuscript Reviewer, Canadian Journal of Fisheries and Aquatic Sciences, ICES Journal of Marine Science, Journal of Marine Systems, Journal of Plankton Research, Marine Biology, Marine Ecology Progress Series, Progress in Oceanography.
Member, Copper River Delta Science Symposium organizing committee (2011 & 2018)
Session Chair, "Climate change impacts on the high-latitude ocean" ASLO Ocean Sciences Meeting, Salt Lake City, Feb. 2012.