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Research Interests

Expertise: Marine biogeochemistry and sedimentology. Research interests: Geochemical particle fluxes in the ocean and large lake systems with emphasis on the quantitative relationship of such fluxes to climate forcing over short and long time scales, and to the formation of recent sediment record; organic carbon cycling and POC aggregation and degradation processes in the water column

and at the sediment/water interface; role of mid-water aggregates in carbon and silica remineralization and export fluxes; development and use of particle imaging instrumentation, submersible vehicle-based technology, and image analysis techniques for the in-situ study of marine particulates and plankton.

Current Research

NSF ITR Program: 2005-2008: \$284,827 (Pilskaln Co-PI): ITR Collaborative Research: Interactive Software Systems for Expert-Assisted Image Analysis and Classification of Aquatic Particles.

NOAA/ECOHAB: 2006-2011: \$831,883 (Pilskaln PI): GOMTOX: Dynamics of *Alexandrium fundyense* distributions in the Gulf of Maine - an observational and modeling study of nearshore and offshore shellfish toxicity, vertical toxin flux, and bloom dynamics in a complex shelf sea.

NOAA/ECOHAB: 2009-2012: \$149,990 (Pilskaln PI): Deposition and resuspension of *Alexandrium fundyense* resting cysts in the Gulf of Maine: Phase II/Modeling.

Selected Publications

Sieracki, M., M. Benfield, A. Hanson, C. Davis, C. Ashjian, **C. Pilskaln**, D. Checkley, H. Sosik, P. Culverhouse, R. Cowen, R. Lopez, W. Balch, and K. Irigoien. 2009. Optical plankton imaging systems for ocean observations. *Proceedings of OceanObs'09: Sustained Ocean Observations and Information for Society*, Venice, Italy, 21-25 September 2009, ESA Publication WPP-306, in publication.

Friedland, K. D., J. A. Hare, G. B. Wood, L. A. Col, L. J. Buckley, D. G. Mountain, J. Kane, J. Brodziak, R. G. Lough, and **C. H. Pilskaln**, 2008. Does the fall phytoplankton bloom control recruitment of Georges Bank haddock, *Melanogrammus aeglefinus*, through parental condition? *Can. J. Fish. Aquat. Sci.* 65(6), 1076-1086.

Benfield, M. C., P. Grosjean, P. Culverhouse, X. Irigoien, M. E. Sieracki, A. Lopez-Urrutia, H. G. Dam, Q. Hu, C. S. Davis, A. Hansen, **C. H. Pilskaln**, E. Riseman, H. Schultz, P. E. Utgoff and G. Gorsky, 2007. RAPID: Research on Automated Plankton Identification. *Oceanography* 20(2), 12-26.

Newell, C. R., **C. H. Pilskaln**, S. M. Robinson and B. A. MacDonald, 2005. The contribution of marine snow to the particle food supply of the benthic suspension feeder, *Mytilus edulis*. *J. Exp. Mar. Biol. Ecol.* 321(2), 109-124.

Pilskaln, C. H., T. A. Villareal, M. Dennett, C. Darkangelo-Wood and G. Meadows, 2005. High concentrations of marine snow and diatom algal mats in the North Pacific Subtropical Gyre: implications for carbon and nitrogen cycles in the oligotrophic ocean. *Deep-Sea Res. I* 52, 2325-2332.

Pilskaln, C. H., 2005. Autobiographical sketches of women in oceanography. *Oceanography* 18(1), 188.

Pilskaln, C. H., S.J. Manganini, V.L. Asper, T.W. Trull, W. Howard, L. Armand and R. Massom, 2004. Biogeochemical particle fluxes in the Indian Sector of the Southern Ocean: 1998-2001. *Deep-Sea Res. I* 51, 307-322.

Pilskaln, C. H., 2004. Seasonal and interannual particle export in an African Rift Valley Lake: A five-year record from Lake Malawi, southern East Africa. *Limnol. Oceanogr.* 49, 964-977.

Pilskaln, C.H. and J. Pike. 2001. Formation of sedimentary laminae in the Black Sea and the role of the benthic flocculent layer. *Paleoceanography* 16, 1-19.

Villareal, T.A., **C. H. Pilskaln**, M.A. Brzezinski, F. Lipschultz and G.B. Gardner. 1999. Upward oceanic nitrate transport by migrating diatom mats. *Nature* 397, 423-425.