

Neil S. Banas

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Appointments

2010 – Affiliate Assistant Professor, School of Oceanography, Univ of Washington
2008 – Oceanographer, Applied Physics Laboratory, Univ of Washington
2005–08 Postdoctoral Research Associate, Univ of Washington

Education

May 2005 Ph.D. in Oceanography, Univ of Washington, Seattle, WA
 Dissertation: *Dynamics of Willapa Bay, Washington: Links to the coastal ocean, tidal dispersion, and oyster carrying capacity*
Dec 2001 M.S. in Oceanography, Univ of Washington, Seattle, WA
May 1998 M.A. in Religious Studies, Univ of Colorado, Boulder, CO
 Thesis: *Quiet Creatures: A Summer on Long Island*
May 1995 B.A. with Distinction in Physics and Religion, Swarthmore College, Swarthmore, PA

Publications

Wheat E, **Banas NS**, Lodgson M, Ruesink J. Competition and tidal circulation drive variation in oyster (*Crassostrea gigas*) condition. In preparation for *Mar. Ecol. Prog. Ser.*

MacCready P, **Banas NS**. Residual circulation, mixing, and dispersion. *Treatise on Estuarine and Coastal Science* (E Wolanski and DS McLusky, eds., Elsevier, in press), chapter 2.5.

Banas NS (2011) Effects of adding complex trophic interactions to a size-spectral plankton model: Emergent variability and emergent structure. *Ecol. Modelling* 222:2663–2675.

Sutherland DA, MacCready P, **Banas NS**, Smedstad LF (2011) A numerical modeling study of what controls the salt content and total exchange flow in the Salish Sea. *J. Phys. Oceanogr.*, 41:1125-1143, doi:10.1175/2011JPO4540.

Kudela RM and 15 co-authors (2010) Multiple trophic levels fueled by recirculation in the Columbia River plume. *Geophys. Res. Lett.*, 37, L18607, doi:10.1029/2010GL044342.

Hickey BM and 20 co-authors (2010) River Influences on Shelf Ecosystems: Introduction and Synthesis. *J. Geophys. Res.*, 115, C00B17, doi:10.1029/2009JC005452.

Banas NS, MacDonald PS, Armstrong DA (2009). Green crab larval retention in Willapa Bay, Washington: An intensive Lagrangian modeling approach. *Estuaries and Coasts*, 32:893-905.

Banas NS, Lessard E, Kudela R, MacCready P, Peterson T, Hickey BM, Frame E (2009). Planktonic growth and grazing in the Columbia River plume region: A biophysical model study. *J. Geophys. Res.*, 114, C00B06, doi:10.1029/2008JC004993.

- Liu Y, MacCready P, Hickey BM, Dever EP, Kosro PM, **Banas NS** (2009). Comprehensive evaluation of a coastal ocean circulation model for the Columbia River plume using observations in summer 2004. *J. Geophys. Res.*, 114, C00B04, doi:10.1029/2008JC004929.
- Banas NS**, MacCready P, Hickey BM (2009) The Columbia River plume as along-shelf barrier and cross-shelf exporter: A Lagrangian model study. *Cont. Shelf Res.*, 29:292-301.
- MacCready P, **Banas NS**, Hickey BM, Dever E (2009) A model study of tide-and wind-induced mixing in the Columbia River estuary and plume. *Cont. Shelf Res.*, 29:278-291.
- Hickey BM, **Banas NS** (2008) Why is the northern end of the California Current System so productive? *Oceanography*, 21:90-107.
- Kudela RM, **Banas NS**, Barth JA, Frame EF, Jay D, Largier JL, Lessard EJ, Peterson TD, Vander Woude AJ (2008) New insights into the controls and mechanisms of plankton productivity in coastal upwelling waters of the northern California Current System. *Oceanography*, 21:40-53.
- Banas NS**, Hickey BM, Newton JA, Ruesink J (2007) Tidal exchange, bivalve grazing, and patterns of primary production in Willapa Bay, Washington, USA. *Mar. Ecol. Prog. Ser.*, 341:123-139.
- Banas NS**, Hickey BM (2005) Mapping exchange and residence time in Willapa Bay, Washington, a branching, macrotidal estuary. *J. Geophys. Res.*, 110(C11), 10.1029/2005JC002950.
- Banas NS**, Hickey BM, MacCready P, Newton JA (2004) Dynamics of Willapa Bay, Washington, a highly unsteady, partially mixed estuary. *J. Phys. Oceanogr*, 34, 2413-2427.
- See also "Papers of Note: Questioning assumptions about estuary balance," *Bull. Amer. Met. Soc.*, Jan 2005)
- Banas NS**, Wang D-P, Yen J (2004) Experimental validation of an individual-based model for zooplankton swarming. *Handbook of Scaling Methods in Aquatic Ecology: Measurement, Analysis, Simulation* (L Seuront and PG Strutton, eds.), CRC Press.
- Hickey, BM, **Banas NS** (2003) Oceanography of the U.S. Pacific Northwest coast and estuaries with application to coastal ecology. *Estuaries*, 26, 1010-1031.
- Hickey, BM, X Zhang, **Banas N** (2002) Coupling between the California Current System and a coastal plain estuary in low riverflow conditions. *J. Geophys. Res.* 107(C10), 1029/1999JC000160.

Invited talks

- 2011 Institut Universitaire Européen de la Mer, Brest, France
 Institute of Coastal Research, Helmholtz-Zentrum Geesthacht, Germany
 PICES (North Pacific Marine Science Organization) Annual Meeting, Khabarovsk, Russia
 Dept of Oceanography, Texas A&M
- 2010 AGU Fall Meeting, San Francisco CA
- 2009 Gordon Research Conference on Coastal Oceanography, New London, NH
- 2007 Civil & Environmental Engineering, UC Berkeley
 Young Investigators series, School of Aquatic and Fishery Sciences, UW
 Ocean Sciences Dept, UC Santa Cruz
 Gordon Research Conference on Coastal Ocean Modeling, New London, NH
 Climate Impacts Group, UW
- 2006 School of Aquatic and Fishery Sciences, UW
 Oregon State Univ, Corvallis, OR

2005 NOAA Southwest Fisheries Science Center, Pacific Grove, CA
Ocean Sciences Dept, UC Santa Cruz
Virginia Institute of Marine Science, Gloucester Pt, VA

Teaching

“Writing Animals”

2011 UW Honors Program (co-taught with Sarah Read, UW English)

Course announcement: “This course will explore how writers in a variety of genres from scientific articles to children's books address the question of what connects us to and divides us from other animals, and the moral and psychological implications of our answers. We will read popular and technical science writing, fieldwork memoirs, food journalism, eco-philosophy, fiction, mythology, and art criticism, with particular attention to the uses and limitations of science in all these contexts. Students will choose one of the genres above as the focus of their writing and research for the quarter. We will also consider what it means to be writing animals, animals who write, ourselves: can we view academic discussion and the activity of writing as particular kinds of embodied, social primate behavior? Species considered in the course will include gorillas, ravens, whales, bears (grizzly, teddy), ants, professors, and goats.”

“Northwest Coastal Stories: Turbulence in Science and Culture”

2004, 10 UW Comp Hist of Ideas (CHID) (400-level) / UW Oceanography (200-level)

2006, 09 UW Honors Program (Civ core offerings)

Course announcement: “This course will follow Jonathan Raban's remarkable travelogue *Passage to Juneau* on a tour through the human and natural history of the Pacific Northwest coastal waters. We'll discuss chaos theory and the circulation of Puget Sound; coastal ecology and climate change; the art and mythology of the Northwest tribes and the problems of ethnography; the Vancouver expedition and the Romantic Sublime. The unifying theme is the interplay between order and chaos, and how we cope (in science, in literary criticism, in political decision-making) with the limits of rationality and the limits of our knowledge. How do we, and how did the indigenous cultures on this coast, deal with natural unpredictability and all the dangers that result—from navigating a turbulent channel to managing a salmon fishery? This course will be driven strongly by student discussion and writing.”

“World Religions and the Environment”

2008 UW Honors Program (Civ core offerings)

Course announcement: “This course will explore intersections between religious belief and practice and the natural world, on both grand and intimate scales. Grand like the all-encompassing vision of interconnectedness in Mahayana Buddhism, or the message of glory and salvation John Muir brought down from the Sierra mountains, or the quiet ferocity of the lords of the undersea world in Haida mythology. Intimate like the ethical dilemma posed by mosquitoes in a zen center in the woods, the poet Gary Snyder's reflections on Grace before meals, or the message of "creation care" spreading among contemporary evangelical congregations. We will discuss the debate over whether the biblical tradition is the root cause of our environmental crisis, the solution to the crisis, or both; how religious belief shapes current environmental activism in Seattle, Thailand, and beyond; and parallels between religious thought and the 'deep ecology' of naturalists like Aldo Leopold. The course will be driven by student discussion, writing, and close reading of compelling primary texts.”

“Humans and Other Animals”

2003, 07 UW Honors Program (Western Civ core offering)

2001 UW CHID (400-level)

Course announcement: “The last few hundred years of Western history have forced non-human animals off much of their traditional range, both environmentally and psychologically. Animals now inhabit only the margins of our communities, our daily awareness, and our understanding of our own identity. This dispossession continues in spite of all we know from biology about the animal roots of human nature and the ecological ties that bind us. What would a rediscovery of these ties look like? Does the path lie through politics and an expanded social contract—for example, animal rights and vegetarianism—or through the flesh, as in the bloody intimacy of the family farm? This class will navigate a path through both the sciences and the humanities: through criticism (Paul Shepard, Mary Midgley, Jean Baudrillard),

first-hand reports by naturalists and scientists (Barry Lopez with a pod of beached whales; Penny Patterson with Koko the gorilla), and fiction (John Berger, J. M. Coetzee). Students will be encouraged to experiment across these genres in their own writing, and to refine their efforts, workshop-style, through conversation and peer review. We will also go on a field trip to the Woodland Park Zoo, to study both the animals inside the cages and the ones looking in."

Teaching assistantships

- 2000 "Introduction to Oceanography," UW Oceanography: lab instructor for 60 students.
1997 "Religion and Contemporary Society", Univ of Colorado Religious Studies: section instructor for 30 students.

Advising and mentoring

Postdocs

- 2010 – Kristen Davis (advisor)
2011 – Samantha Siedlecki (co-advisor)

Graduate committees

- 2011 – Liz Tobin, PhD, UW Oceanography
2011 – Greg Kowalke, PhD, UW Oceanography
2010 – Dan Nowacki, MS, UW Oceanography
2010 Elizabeth Wheat, PhD, UW Biology
2010 Katie Boldt, MS, UW Oceanography

Faculty teaching mentorships (Huckabay Teaching Fellowship program)

- 2010 Erin Ellis, graduate student in Oceanography;
project: "Biogeochemical Cycles and Ecosystem Functioning," a new 400-level course
2008 Eleanor Williams, graduate student in Oceanography;
project: "Communicating with figures: A new upper-level seminar for earth scientists"

Undergraduate independent studies (UW Comp Hist of Ideas)

- 2010 "Human relationships with wildlife" (student: Chelsea Keene)
2004 "Chaos theory, evolution, and the social sciences" (Gabriel Fahoum)
2003 "Animals in captivity: theory and practice" (Miciah Jacobs)
2001 "American nature writing" (Kevin Nielsen)

Fellowships and awards

- 2010 Early career travel grant, PICES Annual Meeting
2003 Sea Grant Award, Mtg of the Estuarine Research Federation
2001 Huckabay Teaching Fellowship, Univ of Washington Graduate School
2000 Best Graduate Student Presentation, Mtg of the Pacific Estuarine Research Society
1999–2002 National Defense Science and Engineering Graduate Fellowship (3 yrs support)
1997 Melville Summer Research Fellowship, Marine Sciences Res Ctr, SUNY Stony Brook
1995–97 Chancellor's Fellowship, Univ of Colorado Graduate School (2 yrs support)

Art and design

- 2012 “Rain and Flow” (solo show), Burk Gallery, Seattle (planned, Mar 2-31)
- 2009 Carrie Bodle, “Sewing Sonifications” (collaborator on science-based sound installation/performance), Westlake Park, Seattle, Aug 10
- Mark Garcia, “Prologue for a History, Theory and Future of Patterns of Architecture and Spatial Design,” *Architectural Design* 79:6-17 (accompanying image)
- 2008 “Maxalot: Processing Light” (group exhibition), Today's Art Festival, The Hague, Sep 26-27
- Patterns 2: Design, Art, and Architecture* (Glasner, Schmidt, and Schöndeling, eds., Birkhäuser Basel) (*Rain* (2007) and *Rosette 80* (2007), pp. 34-37)

Memberships

American Geophysical Union · Coastal and Estuarine Research Federation

Other activities

- 2011 Session chair, Salish Sea Ecosystem Conference
- 2007,10,11 Member, Huckabay Graduate Teaching Fellowship selection committee (UW)
- 2008 Panelist, “Scientist’s Perspectives: What can science and technology studies do for science?” (UW Science Studies Network)
- 2007 Conference chair, Eastern Pacific Oceanographic Congress (EPOC)
- 2006–07 Organizer, UW Oceanography seminar series on ecosystem and biophysical modeling
- 2005–07 Member, UW Honors Program Faculty Council
- 2004 Facilitator, TA Orientation, College of Ocean and Fishery Sciences, UW
- 2003 Senior TA Facilitator, Annual TA Conference on Teaching and Learning, UW Center for Instructional Development and Research
- 2002 Member, UW Physical Oceanography graduate curriculum committee
- 2001 Panelist, “Cross-disciplinary work in the humanities, sciences, and the arts” (UW Comp Hist of Ideas symposium)
- 2001 Organizer, Student Physical Oceanography Retreat (StuPOR), Friday Harbor, WA (Six-institution student research conference)
- 2000 Organizer, The All-Student Oceanography Educational Retreat (tOASter), Friday Harbor, WA (UW-wide, interdisciplinary student research conference)