

PROGRAM



DELAWARE ESTUARY SCIENCE & ENVIRONMENTAL SUMMIT 2015

**“Balancing Progress & Protection –
10 Years of Science in Action”**

January 25 – 28, 2015
Cape May, New Jersey

For more information visit www.DelawareEstuary.org

A Look Back at the 2013 Delaware Estuary Summit



Welcome to the Delaware Estuary Science and Environmental Summit!

On behalf of the Partnership for the Delaware Estuary (PDE), welcome to Cape May and the 6th biennial Delaware Estuary Science and Environmental Summit!

It's hard to believe it's been 10 years since our first Summit. In 2004 it was called a "science conference," but it's always been not *just* about the science. It's about using the science to guide management, build awareness, and improve stewardship today and in future generations for the greatest positive impact on the Delaware Estuary.

In that spirit, our program this year includes greater opportunities for collaboration across disciplines than ever before. We have special sessions on shellfish aquaculture, outreach, and development, in addition to a growing core of technical sessions on topics related to water, habitat, and living resources, covering timely topics like climate change, coastal hazard management, and urban environmental education. But beware: selecting which sessions to attend will be more challenging than ever!

This sharing and collaborating grows more important with each year, as the challenges facing the Estuary grow more complex. The Summit plays an especially critical role for us as the National Estuary Program for the Delaware River and Bay. It brings the latest scientific information, debate, stakeholder input, and opportunities for collaboration to bear on efforts to improve this estuary of national significance. I'm pleased to report that in December, environmental agencies from New Jersey, Pennsylvania, Delaware, the federal government, the City of Philadelphia and the Delaware River Basin Commission renewed their commitment to the Partnership for the Delaware Estuary. This is a testament to the dedication of scientists and managers across the region who have been working together today and since the Delaware Estuary Program was created in 1996.

Each Summit has exceeded our expectations, and I'm sure this one will be no exception. Because it's YOU, and the hundreds of folks who present, discuss, use, and share information here (and afterward) that make the Summit so special. So thank you for *all* you do for the Delaware Estuary, and enjoy the Summit!



Jennifer Adkins

Executive Director
Partnership for the Delaware Estuary



Jennifer Adkins is the executive director at the Partnership for the Delaware Estuary, where she leads a team of science and outreach professionals devoted to improving the health of the tidal Delaware River and Bay and its tributaries.

Jen has been active in conservation planning and collaboration in the Mid-Atlantic region for nearly 20 years, working for The Nature Conservancy in Delaware, the Land Trust Alliance, and the Brandywine Conservancy, before joining the Partnership in 2005.

She is a graduate of the University of Delaware with a Master of Public Administration degree specializing in environmental and energy management, and a Bachelor of Science degree in economics.

Notes

6th Biennial Delaware Estuary Science & Environmental Summit

Balancing Progress & Protection – 10 Years of Science in Action

The Grand Hotel
Cape May, New Jersey
January 25th – 28th, 2015

Sponsors

- Benefactor**
- New Jersey Department of Environmental Protection
- Patron**
- Delaware Coastal Management Program
 - Delaware Department of Natural Resources and Environmental Control
 - Philadelphia Water Department
 - PSEG Nuclear, LLC
 - U.S. Fish and Wildlife Service
- Contributor**
- Alpha Analytical
 - Pennsylvania Department of Environmental Protection
 - Rutgers Institute of Marine and Coastal Sciences
- Friend**
- The Academy of Natural Sciences of Drexel University
 - Barnegat Bay Partnership
 - Delaware City Refining Company, LLC
 - McCabe & Associates
 - Mid-Atlantic Coastal Wetlands Assessment
 - National Oceanic and Atmospheric Organization
 - Pennsylvania Sea Grant
 - University of Delaware Sea Grant

Additional Funding Support Provided by: U.S. Environmental Protection Agency

Agenda at a Glance

Sunday, January 25

5:00 – 8:00 p.m. Registration – *5th Floor*
Networking – *Hemingway's at the Grand Hotel*

Monday, January 26

8:00 a.m. Registration – *5th Floor*
Continental Breakfast* – *Atrium, 1st Floor*

9:00 a.m. Welcome: Jennifer Adkins
Keynote Address: Bruce Stutz, Author of *Natural Lives, Modern Times: People and Places of the Delaware River* – *Grand Ballroom, 1st Floor*

10:30 a.m. Break

10:45 a.m. Concurrent Sessions
Session 1 – Climate Change – *Grand Ballroom A, 1st Floor*
Session 2 – Branding: How Do You Know What People Are Thinking About You? – *Grand Ballroom B, 1st Floor*
Special Session: Trash Talkin' Panel – *Crystal Room, 1st Floor*

12:00 p.m. Lunch & Announcements – *Penthouse Ballroom, 5th Floor*

1:30 p.m. Concurrent Sessions
Session 3 – Water Quality I – *Grand Ballroom A, 1st Floor*
Session 4 – Innovative Outreach – *Grand Ballroom B, 1st Floor*
Special Session: Shellfish Panel I – *Crystal Room, 1st Floor*

3:00 p.m. Break

3:15 p.m. Concurrent Sessions
Session 5 – Water Quality II – *Grand Ballroom A, 1st Floor*
Session 6 – Fundraising: Making the Ask – *Grand Ballroom B, 1st Floor*
Special Session: Shellfish Panel II – *Crystal Room, 1st Floor*

5:15 p.m. Session 7 – Posters & Networking – *Penthouse Ballroom, 5th Floor*

6:30 p.m. Dinner & Presentation: Tom Davidock. Protecting the Delaware Estuary One Beer At A Time – *Penthouse Ballroom, 5th Floor*

Tuesday, January 27

8:00 a.m. Registration – *5th Floor*
Continental Breakfast* – *Atrium, 1st Floor*

9:00 a.m. Concurrent Sessions
Session 8 – Restoration I – *Grand Ballroom A, 1st Floor*
Session 9 – Planning and Administering Focus Groups Part I – *Grand Ballroom B, 1st Floor*

10:00 a.m. Concurrent Sessions
Session 10 – Restoration II – *Grand Ballroom A, 1st Floor*
Session 11 – Planning and Administering Focus Groups Part II – *Grand Ballroom B, 1st Floor*
Session 12 – Ecological Linkages & Ecosystem Services – *Crystal Room, 1st Floor*

11:15 a.m. Break

11:30 a.m. Panel Presentation on the Future of Funding in the Watershed – *Penthouse Ballroom, 5th Floor*

12:15 p.m. Lunch – *Penthouse Ballroom, 5th Floor*

1:30 p.m. Concurrent Sessions
Session 13 – Physical & Chemical Processes – *Grand Ballroom A, 1st Floor*
Session 14 – Social Science 101 for Environmental Outreach Part I – *Grand Ballroom B, 1st Floor*
Session 15 – Living Resources – *Crystal Room, 1st Floor*

3:15 p.m. Break
 3:30 p.m. Concurrent Sessions
 Session 16 – Wetlands – *Grand Ballroom A, 1st Floor*
 Session 17 – Social Science 101 for Environmental Outreach Part II – *Grand Ballroom B, 1st Floor*
 Session 18 – Monitoring and Assessment for the Delaware River Watershed Initiative – *Crystal Room, 1st Floor*
 5:15 p.m. Session 19 – Posters & Networking – *Penthouse Ballroom, 5th Floor*
 7:00 p.m. Dinner (on your own)

Wednesday, January 28

8:00 a.m. Registration – *5th Floor*
 Continental Breakfast* – *Atrium, 1st Floor*
 9:00 a.m. Concurrent Sessions
 Session 20 – Mitigating Human Influence on Natural Resources – *Grand Ballroom A, 1st Floor*
 Session 21 – Partnering with Schools and Youth – *Grand Ballroom B, 1st Floor*
 Special Session: Monitoring Standards for Tidal Wetland Enhancement Projects – *Crystal Room, 1st Floor*
 10:30 a.m. Break
 10:45 a.m. Concurrent Sessions
 Session 22 – Monitoring & Modeling – *Grand Ballroom A, 1st Floor*
 Session 23 – Soaking in Storm Water, Sea Level Rise, and Climate Change Outreach – *Grand Ballroom B, 1st Floor*
 12:30 p.m. Lunch – *Penthouse Ballroom, 5th Floor*
 1:45 p.m. Session 24: Hot Topics – *Grand Ballroom A, 1st Floor*
 3:00 p.m. Announcements, Awards, and Closing Remarks – *Grand Ballroom A, 1st Floor*

**Continental breakfast is provided daily, beginning at 8:00 a.m., in the Atrium outside of the 1st floor Ballroom. If you would like a more substantial breakfast, one can be purchased at Hemingway's Restaurant at the front of the Grand Hotel. Hemingway's opens daily at 6:30 a.m.*

Abstracts are available at the registration table and online at: www.DelawareEstuary.org



Detailed Agenda

Sunday, January 25

Registration: 5:00 PM to 8:00 PM (5th Floor)

Networking: 5:00 PM to 8:00 PM (*Hemingway's at the Grand Hotel*)

Monday, January 26

Registration: 8:00 AM to 9:00 AM (5th Floor)

Continental Breakfast: 8:00 AM to 9:00 AM (*Atrium, 1st Floor*)

Welcome & Keynote: 9:00 AM to 10:30 AM (*Grand Ballroom, 1st Floor*)

Welcome: Jennifer Adkins, Partnership for the Delaware Estuary

Keynote Address: Bruce Stutz, Author of Natural Lives, Modern Times: People and Places of the Delaware River

Break: 10:30 AM to 10:45 AM

Concurrent Sessions: 1, 2, and Trash Talkin' Panel

Session 1: Climate Change & Hurricane Sandy

10:45 AM to 12:00 PM (*Grand Ballroom A, 1st Floor*)

Moderators: Danielle Kreeger (PDE) and Bob Scarborough (DNREC)

10:45	Assessing Climate Change Impacts In Delaware (57)	Jennifer de Mooy
11:00	Sea Level Rise In Delaware Bay: Long-Term Dynamics And Potential Enhancement Of Horseshoe Crab Spawning Habitat (64)	Robert Loveland, Mark L. Botton
11:15	Evaluating The Success Of Horseshoe Crab And Migratory Shorebird Habitat Restoration On Delaware Bay Beaches That Were Damaged By Superstorm Sandy (93)	Joseph Smith, Larry Niles, Dianne Daly, Tim Dillingham, Amanda Dey, Steven Hafner
11:30	Metrics To Identify The Effect Of Hurricane Sandy Projects On Resilience In The Delaware River Watershed (103)	Rachel Muir, Peter Murdoch
11:45	The Social Science Of Sea Level Rise In Delaware: Tracking Trends In Opinions Of Delaware Residents On Climate Change And Sea Level Rise (72)	Kelly Valencik, Susan Love
Associated Posters		
	Upland Forest Buffer Loses Due To Inundation Caused By Sea Level Rise In The Upper And Lower Sub-Watersheds Of The Broadkill River (15)	Kyle Frame
	Microclimatology Of Hurricanes: The Value Of Weather Stations In Understanding Local Effects Of Hurricane Sandy (90)	Lia Domico, James Spotila, Steven Pearson
	A Numerical Model To Evaluate Potential Impacts Of Sea-Level Rise On Groundwater Resources In The Delaware Coastal Plain (92)	Tom McKenna, Changming He

Session 2: Branding: How Do You Know What People Are Thinking About You?10:45 AM to 12:00 PM (*Grand Ballroom B, 1st Floor*)

Moderator: Lisa Wool (PDE)

10:45	Branding: How Do You Know What People Think About Your Organization? (123)	Richard Wells
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Special Session: Trash Talkin' Panel10:45 AM to 12:00 PM (*Crystal Room, 1st Floor*)

Moderator: Dee Durham (PDE) – Panelists listed on page 24

Lunch & Announcements: 12:00 PM to 1:30 PM (*Penthouse Ballroom, 5th Floor*)**Concurrent Sessions: 3, 4, and Shellfish Panel I****Session 3: Water Quality I**1:30 PM to 3:00 PM (*Grand Ballroom A, 1st Floor*)Moderators: Tom Fikslin (*Delaware River Basin Commission*) and Priscilla Cole (PDE)

1:30	Delaware Water Quality Portal: Visualizing Delaware Water Quality Data (56)	Christina Callahan, Kevin R. Brinson
1:45	Preliminary Analysis Of Historical Water Quality In The Tidal Christina River, Delaware (33)	Margaret Christie, Ronald Martin, James Pizzuto
2:00	Development And Implementation Of Site-Specific Nutrient Control Solutions In New Jersey (3)	Thomas Amidon, Marzooq Alebus
2:15	Assessment Of Designated Use Support Within Barnegat Bay, NJ Using The Data Being Collected Between 2008 And 2013 (36)	Hui (Helen) Pang, Patricia Ingelido, Barbara Hirst, Jack Pflaumer, Ariane Giudicelli, Aynan Zaman
2:30	Modeling Role In Setting Site-Specific Criteria And Designated Uses (121)	Andrew Thuman
Associated Posters		
	Drinking Water, Pollution And Public Health In 19th Century Philadelphia (7)	Adam Levine, C. Drew Brown, Ellen Schultz
	The Crawford Treatment Wetland, A Pioneering Vertical Flow Treatment System (21)	Samantha Weber, Dr. Stephanie Stotts
	Geospatial Analysis Of Nitrogen Removal By Riparian Buffers In The Delaware River Basin (38)	Thomas Santangelo, Luc Claessens
	Nutrient Cycling In The Blackiston Tax Ditches (47)	James Welsh, Dr. Stephanie Stotts
	The Results Of A Water Quality Testing Program Conducted By A High School Aquatic Science Class On The West Branch Of The Brandywine Creek, Pennsylvania (80)	Dina DiSantis
	The Asian Clam <i>Corbicula fluminea</i> : Seasonal Filtration Rates Of Representative Populations In Two Tributaries Of The Delaware River (106)	Kurt Cheng, Danielle Kreeger

Session 4: Innovative Outreach

1:30 PM to 3:00 PM (*Grand Ballroom B, 1st Floor*)

Moderator: Lisa Wool (PDE)

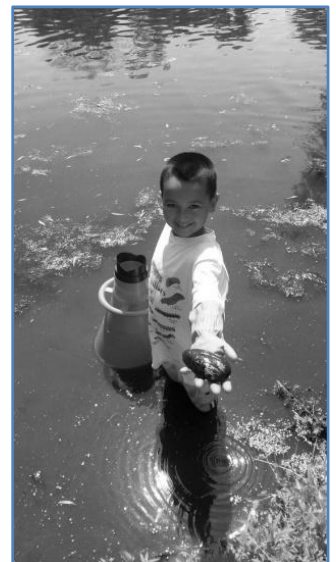
1:30	Streets To Tweets: TTF's Watershed Outreach Campaign (19)	Julie Slavet, Brynn Monaghan
1:45	Using The Principals Of The "Children In Nature Network" To Provide Outreach In Local Communities (65)	Maggie Pletta
2:00	Reaching Out: Relevancy In The Age Of Social Media (77)	Jessica Rittler Sanchez, John Yagecic
2:15	Utilizing Delaware Bay In K-20 Education (53)	Christopher Petrone
Associated Posters		
Got Mussels? A PDE Science And Outreach Collaboration (28)		Deanne Ross, Angela Padeletti

Special Session: Shellfish Culture Now and Tomorrow, Part I: Charting a Course for Delaware Estuary Aquaculture 1:30 PM to 3:00 PM (*Crystal Room, 1st Floor*)

Moderators: Daphne Munroe and Lisa Calvo (*Haskin Shellfish Research Laboratory*) – Panelists listed on page 24

1:30	Shellfish Aquaculture In Delaware's Coastal (Inland) Bays 2015: Status And Outlook (63)	John Ewart, EJ Chalabala
Associated Posters		
New Jersey Shellfish Farming Regulations - Past, Present, And Proposed (75)		Amanda Wenczel, David Bushek

Break: 3:00 PM to 3:15 PM



Volunteer Mussel Survey Workshops, 2014

Concurrent Sessions: 5, 6, and Shellfish Panel II

Session 5: Water Quality II

3:15 PM to 5:15 PM (*Grand Ballroom A, 1st Floor*)

Moderators: Tom Fikslin (Delaware River Basin Commission) and Priscilla Cole (PDE)

3:15	Evaluation Of PCB TMDL Efforts In The Delaware Estuary (26)	Gregory Cavallo
3:30	Spatial And Temporal Trends In PCB Concentrations In Fish Tissue In The Mainstem Of The Delaware River (59)	Thomas Fikslin, Gregory J. Cavallo
3:45	State Of Delaware's "Watershed Approach To Toxics Assessment And Restoration" Program (Watar) (13)	Todd Keyser, Richard W. Greene, John G. Cargill, IV
4:00	Review Of A Comprehensive, Alternate Approach For PCB Congener / Homolog Analysis (10)	James Occhialini, Cynthia McQueen
4:15	Seasonal And Interannual Variations In The Dissolved Oxygen Budget Of An Urbanized Tidal River: The Upper Delaware Estuary (24)	Daniel Tomaso, Raymond G. Najjar
4:30	Application Of Data Mining And Statistical Learning Approaches For Insights Into Dissolved Oxygen (58)	John Yagecic, Thomas J. Fikslin, Erik Silldorff

Session 6: Fundraising: Making the Ask

3:15 PM to 5:15 PM (*Grand Ballroom B, 1st Floor*)

Moderator: Debbie Heaton (PDE)

3:15	Fundraising: Making the Ask	Richard Przywara
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Special Session: Shellfish Culture Now and Tomorrow, Part II

3:15 PM to 5:15 PM (*Crystal Room, 1st Floor*)

Moderators: Daphne Munroe and Lisa Calvo (Haskin Shellfish Research Laboratory) – Panelists listed on page 24

3:15	Situation And Outlook, Growing Oyster Culture In Delaware Bay, New Jersey (82)	Lisa Calvo
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Session 7: Poster Session & Networking

5:15 PM to 6:30 PM (*Penthouse Ballroom, 5th Floor*)

Dinner & Beer Presentation by Tom Davidock: Protecting the Estuary One Beer at a Time

6:30 PM to 8:30 PM (*Penthouse Ballroom, 5th Floor*)

6:30	Protecting The Delaware Estuary One Beer At A Time: How Creative Partnerships With Breweries Are Helping Keep Our Water Clean (102)	Tom Davidock, Elizabeth Horsey
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Tuesday, January 27

Registration: 8:00 AM to 9:00 AM (5th Floor)

Continental Breakfast: 8:00 AM to 9:00 AM (Atrium, 1st Floor)

Concurrent Sessions: 8 & 9

Session 8: Restoration I

9:00 AM to 10:00 AM (Grand Ballroom A, 1st Floor)

Moderators: Josh Moody (PDE) and Moses Katkowski (The Nature Conservancy)

9:00	Update On Urban Water Federal Partnership Activities (100)	Simeon Hahn, Frank McLaughlin, Julie Ulrich, Bobbi Britton
9:15	Cross-Sector Collaboration In Action: The Urban Waters Federal Partnership In The Greater Philadelphia Area / Delaware River Watershed (76)	Michael Leff
9:30	Bringing The Bulldozers To The Benthic Zones Near Brownfield Sites To Improve Regional Water Quality: Integrating Riparian Restoration Projects Into Remediation Activities At Camden's Brownfield Sites (94)	Franklin McLaughlin, Jay Springer, Danielle Kreeger, Josh Moody
9:45	Living Shoreline Techniques In Delaware (109)	Douglas Janiec
Associated Posters		
	Multiyear Study Of Leatherman's Run Watershed And Assessment Of The Impact Of Retrofit And Stream Restoration Projects (18)	Marianne Walch, Michael Pieper
	Brandywine-Piedmont Watershed Plan (35)	Shyanne Miller, Dr. Jerry Kauffman
	Coordinated Conservation Projects And Monitoring Outcomes In The Delaware River Watershed Initiative, Including The Kirkwood-Cohansey Aquifer (84)	Stefanie Kroll, Richard Horwitz, Roland Wall, Jerry Mead, David Velinsky
	Delaware Estuary Living Shoreline Initiative (DELSI): Four New Installations In 2014 (104)	Angela Padeletti, Danielle Kreeger, Joshua Moody, Laura Whalen
	Scientific Monitoring Protocols To Gauge Living Shoreline Outcomes (115)	Danielle Kreeger, Joshua Moody, Angela Padeletti
	Mussels, Marshes And Submerged Grasses: Hybrid Living Shoreline Concepts To Remediate Urban Tidal Freshwater Waterfronts (117)	Danielle Kreeger, Joshua Moody, Franklin B. McLaughlin, Jay Springer, Sari Rothrock
	Restoring Horseshoe Crab Habitat On NJ's Delaware Bay After Hurricane Sandy (126)	Dianne Daly, Larry Niles, PhD., Joseph Smith, PhD, Tim Dillingham, Alek Modjedski, Steven Hafner, Amanda Dey, PhD

Session 9: Planning and Administering Focus Groups Part I9:00 AM to 10:00 AM (*Grand Ballroom B, 1st Floor*)*Moderator: Shaun Bailey (PDE)***Concurrent Sessions: 10, 11, and 12****Session 10: Restoration II**10:00 AM to 11:15 AM (*Grand Ballroom A, 1st Floor*)*Moderators: Josh Moody (PDE) and Moses Katkowski (The Nature Conservancy)*

10:00	Break	
10:15	Living Shoreline Implementation As An Element In A Coastal Community's Response To Localized Flooding (9)	Joe Berg
10:30	Coastal Marsh Restoration/Living Shoreline - Pilot Projects In The Mid-Atlantic Region (4)	Lawrence Malizzi, Rejina Sharma, Robert Fiorile
10:45	Beneficially Reusing Dredge Material To Rebuild A Marsh Along Pepper Creek (71)	Andrew Howard, Alison B. Rogerson, Bartholomew Wilson, Daniel J. Brower, Ariane K. Nichols, Maggie K. Pletta, Matthew A. Jennette
11:00	Marsh Futures: Assessment And Mapping Of Elevation Capital And Shoreline Erosion To Guide Restoration Of Coastal Wetlands At The Local Scale (119)	Danielle Kreeger, Joshua Moody, Moses Katkowski, Diane Rosencrance, Meghan Boatright

Session 11: Planning and Administering Focus Groups Part II10:00 AM to 11:15 AM (*Grand Ballroom B, 1st Floor*)*Moderator: Shaun Bailey (PDE)***Session 12: Ecological Linkages & Ecosystem Services**10:00 AM to 11:15 AM (*Crystal Room, 1st Floor*)*Moderators: Dorina Frizzera (NJ DEP) and Heather Jensen (U.S. Army Corps of Engineers)*

10:00	Geospatial Variation Of Ribbed Mussel (<i>Geukensia demissa</i>) Ecosystem Services Across The Salt Marsh Landscape (118)	Joshua Moody, Danielle Kreeger, Elizabeth Watson
10:15	Quantifying The Value Of Delaware's Tidal Wetland Ecosystem To Facilitate Protection And Acquisition (34)	Amanda Santoni
10:30	Measuring The Economic Value Of Ecosystem Services And Coastal Resiliency: A Case Study On Ecological Restoration In Cape May (8)	Elizabeth Schuster
10:45	Toward Innovative Approaches For Improving Water Quality: Linking Eco-Hydrology With Ecosystem Services At The Watershed Scale (125)	Luc Claessens, Gerald Kauffman

Break: 11:15 AM to 11:30 AM

Panel Presentation on the Future of Funding in the Watershed

11:30 AM to 12:15 PM (*Penthouse Ballroom, 5th Floor*)

Panelists and bios listed on page 23

Lunch: 12:15 PM to 1:30 PM (*Penthouse Ballroom, 5th Floor*)

Concurrent Sessions: 13, 14, and 15

Session 13: Physical & Chemical Processes

1:30 PM to 3:15 PM (*Grand Ballroom A, 1st Floor*)

Moderators: David Velinsky (Academy of Natural Sciences of Drexel University) and Bob Chant (Rutgers University)

1:30	Exploring Localized Mixing Dynamics In The Upper Delaware Estuary (25)	Ramona McCullough, Philip Duzinski
1:45	Sediment Dynamics In The Delaware Estuary (27)	Jacqueline McSweeney, Robert Chant
2:00	Estimation Of Nitrogen Removal In Delaware Estuary As A Function Of Spatial Residence Time (30)	Aboozar Tabatabai, John Wilkin
2:15	Carbon, Nitrogen And Phosphorus Sequestration In Delaware River Tidal Wetlands (96)	David Velinsky, Tracy Quirk, Christopher Sommerfield
2:30	Thermal Imaging Of Hydrologic Processes In Streams And Wetlands In The Delaware Estuary Watershed, Delaware And Pennsylvania (29)	Tom McKenna, Jack A. Puleo, Aline Pieterse

Session 14: Social Science 101 for Environmental Outreach Part I

1:30 PM to 3:15 PM (*Grand Ballroom B, 1st Floor*)

Moderator: Shaun Bailey (PDE)

Session 15: Living Resources

1:30 PM to 3:15 PM (*Crystal Room, 1st Floor*)

Moderators: Lance Butler (Philadelphia Water Department) and William Eldridge (Stroud Water Research Center)

1:30	Comparison Of The Retention And Growth Of Native Freshwater Mussels Reintroduced Into Nine Streams Of The Delaware Estuary, 2011-2014 (105)	Kurt Cheng, Danielle Kreeger, Angela Padeletti, Roger Thomas
1:45	Assessment Of Fish Utilization On A Sub-Tidal Oyster Restoration Area In A Mid-Atlantic Estuary (52)	Jenny Paterno, David Bushek, Lisa Calvo, Thomas Grothues
2:00	Upwelling Of Acidified Water: Not Just An Issue For Shellfish Hatcheries On The West Coast Of The US (78)	Daphne Munroe, Matthew Poach, Ian Abrahamsen
2:15	Monitoring Marsh Bird Communities To Support Rapid Wetland Condition Assessments (67)	Alison Rogerson, Andrew Howard, Maggie Pletta, Matthew Jennette
2:30	Examining Nearshore Finfish And Crustacean Assemblages At Bulkheaded And Unaltered Salt Marsh Shorelines Within Hereford Inlet Estuary, NJ (48)	Kathryn Sellers, Lisa M. Ferguson

Associated Posters	
Delaware National Estuarine Research Reserve: Marsh Bird Monitoring Along The St. Jones River (39)	Christina Whiteman
Identifying Tree Species For Ring Analysis At The St. Jones Reserve (54)	Brooke Thompson, Stephanie Stotts
Elevations Of Marsh Bird Nests In A Tidal Wetland In Southern New Jersey (68)	Lisa Ferguson, Mollie Nugent, Kathryn Sellers, Lenore Tedesco
Decadal Re-Evaluation Of Contaminant Exposure And Osprey (<i>Pandion haliaetus</i>) Productivity In Delaware Bay From A Food Web Perspective (98)	Barnett Rattner, Rebecca S. Lazarus
Freshwater Mussel (<i>Unionidae</i>) Distribution In Relation To Water Depth In The Delaware River (107)	Elena Colon, Roger Thomas, Danielle Kreeger, Priscilla Cole, Lance Butler
Exploring Freshwater Mussel Benthic Habitat Preferences In The Urban Tidal Delaware River (114)	Priscilla Cole, Danielle Kreeger, Roger Thomas, Lance Butler, Elena Colon
Sub-Tidal Movements Of Horseshoe Crabs (<i>Limulus polyphemus</i>) In Delaware Bay (124)	Molly Ellwood, Fox, D. A., Hice-Dunton, L.

Break: 3:15 PM to 3:30 PM

Concurrent Sessions: 16, 17, and 18

Session 16: Wetlands

3:30 PM to 5:15 PM (*Grand Ballroom A, 1st Floor*)

Moderators: Ken Strait (PSE&G) and Angela Padeletti (PDE)

3:30	A Use Attainability Analysis Based Alternative Dissolved Oxygen Criteria For Wetland Dominated Tidal Portion Of Murderkill River, Delaware (60)	Hassan Mirsajadi
3:45	Developing Seeding Techniques For Tidal Marsh And Shoreline Stabilization (74)	Christopher Miller, Scott Snell, Melissa Alvarez
4:00	Vegetation Zone Dominance: The Use Of Plant Communities As A Proxy To Estimate Marsh Resilience (110)	LeeAnn Haaf, Jessie Buckner, Joshua Moody, Angela Padeletti, Danielle Kreeger
4:15	Delaware Value-Added Assessment Method For Nontidal Wetlands (70)	Alison Rogerson, Andrew Howard, Maggie Pletta, Matthew Jennette
4:30	Bayshore Sustainable Infrastructure Planning Project (BaySIPP): Use Of Vegetation Growth Form In Elevation Capital Mapping (116)	Joshua Moody, Danielle Kreeger, Moses Katkowski, Diane Rosencrance, Megan Boatright
4:45	The Prime Hook National Wildlife Refuge Coastal Restoration Project: An Overview Of The Project Development To Dredges On The Horizon	Bartholomew Wilson

Associated Posters	
Delaware Wetland Restoration Strategies: Does Planting Make A Difference After 15 Years (42)	John Dougherty, Dr. Stephanie Stotts
Wetland Assessment Report: Christina River Watershed (69)	Alison Rogerson, Andrew M. Howard, Jessie Buckner, LeeAnn Haaf, Danielle Kreeger, Maggie Pletta, Matthew Jennette
Analyzing Long Term Accretion And Subsidence Within The Delaware National Estuarine Research Reserve (89)	Drexel Siok
Variation In Recent Marsh Accretion Along Delaware And Barnegat Bays (101)	Kirk Raper, Tracy Quirk, David Velinsky
Shoreline Changes In The Delaware And Barnegat Estuaries: Historic Shifts And Significance For Marsh Futures (111)	LeeAnn Haaf, Jessie Buckner, Angela Padeletti, Danielle Kreeger

Session 17: Social Science 101 for Environmental Outreach Part II

3:30 PM to 5:15 PM (*Grand Ballroom B, 1st Floor*)

Moderator: Shaun Bailey (PDE)

Session 18: Monitoring and Assessment for the Delaware River Watershed Initiative

3:30 PM to 5:15 PM (*Crystal Room, 1st Floor*)

Moderator: Carol Collier (Academy of Natural Sciences of Drexel University)

3:30	Reach Scale Stream Water Temperature Predictions And Application To Assess Effects Of Land Use, Restoration And Climate Changes On Fish Growth Potential In The Delaware River Basin (86)	Alexander Waldman, Jerry Mead, Lin Perez, Stefanie Kroll, Franco Montalto
3:45	Development Of Rapid Salamander Monitoring And Habitat Assessment Protocols For The Delaware River Basin (31)	David H. Keller, Richard J. Horwitz
4:00	Freshwater Fish Assemblages Of The Delaware River Basin: What Causes Them And How Can They Be Used For Bioassessment (79)	Richard Horwitz, David H. Keller, Stefanie Kroll
4:15	Relation Of Algal Assemblages To The Subwatershed Clusters Of The Delaware River Watershed Initiative (51)	Alison Minerovic, Frank Acker
4:30	Macroinvertebrate Communities In The Eight Subwatershed Clusters Of The Delaware River Watershed Initiative (41)	Stefanie A. Kroll, John K. Jackson
4:45	Web-Based Mapping Applications For Visualizing Monitoring And Modelling In The Delaware Basin (91)	Lin Perez, A. Waldman, J. Mead, S. Kroll

Session 19: Poster Session & Networking

5:15 PM to 7:00 PM (*Penthouse Ballroom, 5th Floor*)

Dinner (on your own): 7:00 PM

Wednesday, January 28

Registration: 8:00 AM to 9:00 AM (5th Floor)

Continental Breakfast: 8:00 AM to 9:00 AM (Atrium, 1st Floor)

Concurrent Sessions: 20, 21, and Monitoring Panel

Session 20: Mitigating Human Influence on Natural Resources

9:00 AM to 10:30 AM (Grand Ballroom A, 1st Floor)

Moderator: John Yagecic (Delaware River Basin Commission)

9:00	Innovative Solution For Coastal Fish Nursery Restoration (5)	Fabien Dubas
9:15	Analysis Of Bacteria In A New Jersey Coastal Lagoon To Locate A Source Of Contamination (113)	Michael Gasbarro, Kathryn Goddard
9:30	Horseshoe Crab Rescue At Fortescue Beach - Implications For Mortality, Beach Restoration Need And Future Assessment Of Spawning Habitat (11)	Rosy Tucker, Raffaella Marano, Jackie Garcia, Ron Smith, Dane Ward
9:45	Product Stewardship Can Resolve Climate Change (17)	William Haaf, Dianne Herrin

Session 21: Partnering with Schools and Youth

9:00 AM to 10:30 AM (Grand Ballroom B, 1st Floor)

Moderator: Melissa Bittner (PDE)

9:00	Greenstem Network: Philly Schoolyard Rain Gardens Go High Tech At Low Cost (12)	Matthew Fritch
9:15	City Of Wilmington Green Jobs Program (20)	Martha Narvaez
9:30	Using The Urban Watershed As An Integrated Context For Learning: Classroom To Schoolyard Curriculum Connection (22)	Ellen Schultz
9:45	One Fish, Two Fish: An Educational Pilot Study (66)	Jenny Paterno, Lisa Calvo, David Bushek
10:00	The Development, Implementation And Curriculum Overview Of A High School Aquatic Science Course (73)	Dina DiSantis

Special Session: Monitoring Standards for Tidal Wetland Enhancement Projects

9:00 AM to 10:30 AM (Crystal Room, 1st Floor)

Moderator: Danielle Kreeger (PDE) – Panelists listed on page 24

Break: 10:30 AM to 10:45 AM

Concurrent Sessions: 22 & 23

Session 22: Monitoring & Modeling

10:45 AM to 12:30 PM (Grand Ballroom A, 1st Floor)

Moderator: Jeff Fischer (USGS)

10:45	Monitoring Stormwater Trash (83)	Kelly O'Day
11:00	Rainfall Interception By Urban Low-Height Shrub Canopy And Its Hydrological Implication - Experimental Study In Philadelphia (50)	Walter Yerk, Franco Montalto
11:15	Analysis Of Storm Surge From Observational Tide Records In The Delaware Inland Bays (46)	John Callahan
11:30	Tidal Marsh Restoration And Monitoring At Prime Hook National Wildlife Refuge, Milton, DE (49)	Kenny Smith
11:45	A Hydrologic Model Of The Delaware River Basin (85)	Jeffrey Fischer, Tanja N Williamson
12:00	Delaware Valley Early Warning System: Automated 3D Tidal Transport Model (95)	Paula Kulis, Elizabeth North, Kelly Anderson
Associated Posters		
	Using Citizen Scientists To Monitor Watershed Improvements In Five Philadelphia Area Watersheds (43)	Stephanie Figary, Alex Cooper, Robin Eisman, Patrick Gardener, Brad Nyholm
	Development Of A High Water Mark Database And Display System For Coastal Flooding Events In Delaware (45)	Christina Callahan, John A. Callahan, Kevin R. Brinson, Hunter C. Brown, Daniel J. Leathers
	Relationships Between Macroinvertebrate Ibi Scores And Land Use In The Delaware River Basin (87)	Kathryn Christopher, Lindsay Perez, Alexander Waldman, Stefanie Kroll, Jerry Mead, Roland Wall
	Relationships Between Agricultural Land Use, Lentic Macroinvertebrates And Habitat Quality In The Schuylkill And Brandywine-Christina (88)	Meghan O'Donnell, Stefanie Kroll
	PBDEs In The Delaware Estuary: Human Health Criteria And Temporal Trends In Fish Tissue Concentrations, 2004-2012 (99)	Kelly Sand
	Using A Rapid Assessment Method To Compare Coastal Wetlands In The Delaware Estuary And Barnegat Bay (120)	Jessie Buckner, Kurt Cheng
	Point Density Requirements For Salt Marsh Elevation Determination Using Real-Time Kinetic Surveying And Empirical Bayesian Kriging GIS Analysis (122)	Joshua Moody, Priscilla Cole

Session 23: Soaking in Storm Water, Sea Level Rise, and Climate Change Outreach10:45 AM to 12:30 PM (*Grand Ballroom B, 1st Floor*)Moderator: *Melissa Bittner (PDE)*

10:45	Delaware Livable Lawns: A Partnership Program To Reduce Nutrient Runoff From Lawns (16)	Marianne Walch, Sara Wozniak, Randy Cole, Susan Barton, Valann Budischak
11:00	The Darby Cobbs Stormwater Initiative: Getting To The New Normal (40)	Jamie Anderson, Diana Andrejczak, Mario Cimino, Peter Puglionesi, David Schwartz
11:15	Working For Our Waterfronts: A Public Engagement Process For Preserving Delaware's Traditional Maritime Communities (44)	Ed Lewandowski, Clark Evans, Bill McGowan
11:30	Re-Framing The Architect's Responsibility For Climate-Sensitive Design: Renewables, Walkables, Geenables, Reflectables (62)	John Mateyko, Patricia Miller, Andrea Trablisi
11:45	From Creek To Sewer: History Of Topographical Change In Philadelphia (6)	Adam Levine

Lunch: 12:30 PM to 1:45 PM (*Penthouse Ballroom, 5th Floor*)**Session 24: Hot Topics**1:45 PM to 3:00 PM (*Grand Ballroom A, 1st Floor*)Moderators: *Susan Kilham (Drexel University) and Laura Craig (American Rivers)*

1:45	Energy Attenuation And Hybrid Living Shorelines: A Viable Tool For Coastal Resilience (112)	Douglas Janiec
2:00	Developing Seashore Mallow As An Alternative Crop On Salinized Soils In Delaware And Investigating Its Use As A New Source Of Poultry House Bedding (32)	Jennifer Volk, Kate Hackett, Bill Brown, Donna Hamilton, Denise Seliskar, Jack Gallagher
2:15	Protecting The Environment And Public Health In Camden: A Green & Grey Infrastructure Approach (37)	Meishka Mitchell, Andrew Kricun, Jessica Franzini, Jeremiah Bergstrom, Maurie Smith
2:30	Camden's Waterfront Brownfields And Landfills: Opportunities For Creation Of Environmental Assets That Benefit The Entire Delaware River Watershed (61)	Frank McLaughlin
Associated Posters		
Marine Spatial Planning For Delaware Waters (81)		Robert Scarborough, Bonnie Arvay, Christina Whiteman, Kate Fleming

Announcements, Awards, and Closing Remarks: 3:00 PM to 3:30 PM (*Grand Ballroom A, 1st Floor*)Abstracts are available at the registration table and online at: www.DelawareEstuary.org

Poster Presentations

Jessie Buckner, Kurt Cheng. *Using A Rapid Assessment Method To Compare Coastal Wetlands In The Delaware Estuary And Barnegat Bay* (120)

Christina Callahan, John A. Callahan, Kevin R. Brinson, Hunter C. Brown, Daniel J. Leathers. *Development Of A High Water Mark Database And Display System For Coastal Flooding Events In Delaware* (45)

Kurt Cheng, Danielle Kreeger. *The Asian Clam Corbicula fluminea: Seasonal Filtration Rates Of Representative Populations In Two Tributaries Of The Delaware River* (106)

Kathryn Christopher, Lindsay Perez, Alexander Waldman, Stefanie Kroll, Jerry Mead, Roland Wall. *Relationships Between Macroinvertebrate Ibi Scores And Land Use In The Delaware River Basin* (87)

Priscilla Cole, Danielle Kreeger, Roger Thomas, Lance Butler, Elena Colon. *Exploring Freshwater Mussel Benthic Habitat Preferences In The Urban Tidal Delaware River* (114)

Elena Colon, Roger Thomas, Danielle Kreeger, Ph.D., Priscilla Cole, Lance Butler. *Freshwater Mussel (Unionidae) Distribution In Relation To Water Depth In The Delaware River* (107)

Dianne Daly, Larry Niles, PhD., Joseph Smith, PhD, Tim Dillingham, Alek Modjedski, Steven Hafner, Amanda Dey, PhD. *Restoring Horseshoe Crab Habitat On NJ's Delaware Bay After Hurricane Sandy* (126)

Dina DiSantis. *The Results Of A Water Quality Testing Program Conducted By A High School Aquatic Science Class On The West Branch Of The Brandywine Creek, Pennsylvania* (80)

Lia Domico, James Spotila, Steven Pearson. *Microclimatology Of Hurricanes: The Value Of Weather Stations In Understanding Local Effects Of Hurricane Sandy* (90)

John Dougherty, Dr. Stephanie Stotts. *Delaware Wetland Restoration Strategies: Does Planting Make A Difference After 15 Years* (42)

Molly Ellwood, Fox, D. A., Hice-Dunton, L. *Sub-Tidal Movements Of Horseshoe Crabs (Limulus polyphemus) In Delaware Bay* (124)

Lisa Ferguson, Mollie Nugent, Kathryn Sellers, Lenore Tedesco. *Elevations Of Marsh Bird Nests In A Tidal Wetland In Southern New Jersey* (68)

Stephanie Figary, Alex Cooper, Robin Eisman, Patrick Gardener, Brad Nyholm. *Using Citizen Scientists To Monitor Watershed Improvements In Five Philadelphia Area Watersheds* (43)

Kyle Frame. *Upland Forest Buffer Loses Due To Inundation Caused By Sea Level Rise In The Upper And Lower Sub-Watersheds Of The Broadkill River* (15)

LeeAnn Haaf, Jessie Buckner, Angela Padeletti, Danielle Kreeger. *Shoreline Changes In The Delaware And Barnegat Estuaries: Historic Shifts And Significance For Marsh Futures* (111)

Danielle Kreeger, Joshua Moody, Franklin B. McLaughlin, Jay Springer, Sari Rothrock. *Mussels, Marshes And Submerged Grasses: Hybrid Living Shoreline Concepts To Remediate Urban Tidal Freshwater Waterfronts* (117)

Danielle Kreeger, Joshua Moody, Angela Padeletti. *Scientific Monitoring Protocols To Gauge Living Shoreline Outcomes* (115)

Stefanie Kroll, Richard Horwitz, Roland Wall, Jerry Mead, David Velinsky. *Coordinated Conservation Projects And Monitoring Outcomes In The Delaware River Watershed Initiative, Including The Kirkwood-Cohansey Aquifer* (84)

Adam Levine, C. Drew Brown, Ellen Schultz. *Drinking Water, Pollution And Public Health In 19th Century Philadelphia* (7)

Tom McKenna, Changming He. *A Numerical Model To Evaluate Potential Impacts Of Sea-Level Rise On Groundwater Resources In The Delaware Coastal Plain* (92)

Shyanne Miller, Dr. Jerry Kauffman. *Brandywine-Piedmont Watershed Plan* (35)

Joshua Moody, Priscilla Cole. *Point Density Requirements For Salt Marsh Elevation Determination Using Real-Time Kinetic Surveying And Empirical Bayesian Kreiging GIS Analysis* (122)

Meghan O'Donnell, Stefanie Kroll. *Relationships Between Agricultural Land Use, Lentic Macroinvertebrates And Habitat Quality In The Schuylkill And Brandywine-Christina* (88)

Angela Padeletti, Danielle Kreeger, Joshua Moody, Laura Whalen. *Delaware Estuary Living Shoreline Initiative (DELSI): Four New Installations In 2014* (104)

Kirk Raper, Tracy Quirk, David Velinsky. *Variation In Recent Marsh Accretion Along Delaware And Barnegat Bays* (101)

Barnett Rattner, Rebecca S. Lazarus. *Decadal Re-Evaluation Of Contaminant Exposure And Osprey (*Pandion haliaetus*) Productivity In Delaware Bay From A Food Web Perspective* (98)

Alison Rogerson, Andrew M. Howard, Matthew Jennette, Jessie Buckner, LeeAnn Haaf, Danielle Kreeger, Maggie Pletta. *Wetland Assessment Report: Christina River Watershed* (69)

Deanne Ross, Angela Padeletti. *Got Mussels? A PDE Science And Outreach Collaboration* (28)

Kelly Sand. *PBDEs In The Delaware Estuary: Human Health Criteria And Temporal Trends In Fish Tissue Concentrations, 2004-2012* (99)

Thomas Santangelo, Luc Claessens. *Geospatial Analysis Of Nitrogen Removal By Riparian Buffers In The Delaware River Basin* (38)

Robert Scarborough, Bonnie Arvay, Christina Whiteman, Kate Fleming. *Marine Spatial Planning For Delaware Waters* (81)

Kathryn Sellers, Lisa M. Ferguson. *Examining Nearshore Finfish And Crustacean Assemblages At Bulkheaded And Unaltered Salt Marsh Shorelines Within Hereford Inlet Estuary, NJ* (48)

Drexel Siok. *Analyzing Long Term Accretion And Subsidence Within The Delaware National Estuarine Research Reserve* (89)

Brooke Thompson, Stephanie Stotts. *Identifying Tree Species For Ring Analysis At The St. Jones Reserve* (54)

Marianne Walch, Michael Pieper. *Multiyear Study Of Leatherman's Run Watershed And Assessment Of The Impact Of Retrofit And Stream Restoration Projects* (18)

Samantha Weber, Dr. Stephanie Stotts. *The Crawford Treatment Wetland, A Pioneering Vertical Flow Treatment System* (21)

James Welsh, Dr. Stephanie Stotts. *Nutrient Cycling In The Blackiston Tax Ditches* (47)

Amanda Wenczel, David Bushek. *New Jersey Shellfish Farming Regulations - Past, Present, And Proposed* (75)

Christina Whiteman. *Delaware National Estuarine Research Reserve: Marsh Bird Monitoring Along The St. Jones River* (39)



Featured Speakers

Alison JG Krepp

Office for Coastal Management, NOAA

Alison has spent more than ten years in the fields of education, policy, and planning. She works with the National Oceanic and Atmospheric Administration (NOAA) in the Office for Coastal Management where she applies her expertise in strategic planning, process design, and stakeholder engagement to support its state-federal partnership programs. Prior to NOAA, she worked as a planner with the South Carolina Department of Natural Resources. She has a Bachelor of Science in natural resource management from the University of Maine and a Master of Science in environmental policy and behavior from the University of Michigan. When not working on coastal issues, Alison enjoys time outdoors in mid-Maryland with her husband, their three sons, and 2 year-old yellow Labrador retriever.



Richard T. Przywara, CFRE

West Chester University Foundation and University Student Housing, Inc.



In Richard's role as Executive Director, he is responsible for capital, annual, and planned gift fundraising. Currently, the Foundation is running a \$50 million capital campaign. In addition to raising funds he led a \$240 million revitalization project of the student residence halls. Completed in 2014, this project involved the demolition of existing residence halls and construction of six modern high-rise structures.

Prior to serving in this role, Rich served as Chief of Staff to the County Executive, and General Manager of the Department of Special Service for New Castle County, Delaware. In his role for New Castle County he supervised a staff of over 450 and managed an annual operating and capital budget exceeding \$100 million. Previously, Rich held the position of Associated Dean of Alumni and Development at Widener University School of Law and he was the Director of Development for the YMCA of Delaware.

Richard received his B.A. in Criminal Justice and a Masters in Public Administration from the University of Delaware. Rich is a member of the Nonprofit Center at LaSalle University, leading workshops on various fundraising topics over the past decade.

Bruce Stutz

Author of Natural Lives, Modern Times, People and Places of the Delaware River

Bruce Stutz is a writer and editor of science, environment, and natural history. For more than thirty years he has traveled the world to report on nature, the scientists who study it, and the challenges of environmental change. His books, articles, and essays take readers on journeys into the natural world and impart to them the joys of scientific discovery. His articles have appeared in national and international newspapers and magazines, among them Discover, Natural History, Scientific American, The New York Times Magazine, Audubon, OnEarth, and Conde Nast Traveler.



Bruce's book *Natural Lives, Modern Times, People and Places of the Delaware River* presents a new kind of environmental history, one that connected the nature of this longest stretch of undammed river on the East Coast to the nature of the civilization that grew up along its banks, a civilization that eventually threatened the very river that gave it life.

At present he is a contributing editor to OnEarth, the magazine of the Natural Resources Defense Council, and to e360, the online environmental journal of the Yale School of Forestry.

Richard Wells

The Wellynn Group, LLC



Richard Wells has almost 30 years experience in all phases of communications, public affairs, public relations, and marketing. His career began as the public relations director for The Center for Literacy in Philadelphia, a non-profit agency working to teach adults to read. In the late 1980s, Richard began working in the healthcare industry, including spending sixteen years with Main Line Health, one of the largest multi-hospital systems in Pennsylvania.

Over his career, Richard has been responsible for all phases of strategy, planning and management of internal and external corporate communications, media relations, community and government relations, crisis communications, marketing, market research, and advertising.

In 2007, Richard left Main Line Health to become the principal and co-founder of The Wellynn Group, a consulting practice in marketing and branding, public affairs, and communications. He has served clients in healthcare, energy, academia and education, real estate development, and the non-profit sectors. The Philadelphia Business Journal has named The Wellynn Group one of the Top Branding, Marketing, and Media Services firms for three years in a row, 2012 – 2014.

Richard earned an English degree from the University of Virginia and an MBA from St. Joseph's University in Philadelphia. He resides in Bala Cynwyd, PA and in his spare time plays bass guitar and sings in a band that performs regularly in the Main Line area.

Future of Funding in the Watershed Panelists

Kim Beidler, New Jersey Audubon



Kim is the Director of the Coalition for the Delaware River Watershed— a network of non-profit organizations working to protect water resources throughout the four states of the Watershed. In this capacity, she has overseen the growth of the Coalition from a dozen founding members to more than 60 organizations, and coordinates Coalition activities, including advocacy efforts, collaborations on watershed-wide initiatives, and an annual conference. Prior to joining the Coalition, Kim worked extensively on complex land use planning and environmental management projects for agencies at all levels of government and not-for-profit organizations. Kim was employed as a Principal Resource Planner at the New Jersey Pinelands Commission where she managed projects involving community design, watershed planning, technology evaluation, and related issues. She also worked as a consultant to the U.S. Environmental Protection Agency and several state agencies, and previously, as a research assistant at the Academy of Natural Sciences in Philadelphia. She holds a Bachelor of Science degree in Biology from Bucknell University and a Master's degree in Resource Economics and Policy from Duke University.

Clare Billett, William Penn Foundation



Clare is a Program Officer for Watershed Protection. For most of her career, she has been invested in preserving, restoring and improving natural resources and ecological systems throughout the Mid-Atlantic Region – working across the conservation practitioner's spectrum from ecological restoration, management and design to land protection, conservation planning, and natural resource prioritization. She led regional SmartConservation efforts that resulted in the development of innovative site assessment and decision-support tools and also generated a regional Greenspace network of conservation hubs and migration corridors that would create a sustainable, connected landscape throughout eastern Pennsylvania. She has worked for private consultants, national and regional conservation non-profits and also recently directed the wildland-urban interface brush management program for the City of San Diego. Clare holds a Bachelor's degree in Geography with a specialization in Biogeography from Nottingham University and a Master's degree in Landscape Architecture from the University of Sheffield, UK.

Rachel Dawson, National Fish and Wildlife Foundation



Rachel joined the National Fish and Wildlife Foundation in 2014, where she manages a \$7 million fund for habitat restoration projects in the Delaware River watershed. Prior to that, she was the legislative representative for the water restoration team at the National Wildlife Federation where she advocated on behalf of national and regional clean water laws, policies and programs critical for large-scale ecosystem restoration and a policy analyst at the Northeast Midwest Institute, focusing on issues in the watersheds of the northeast and mid-Atlantic, including the Delaware River Basin. She has worked closely with watershed-based Congressional task forces to address water quality issues and promote improved information, ecosystem restoration and stakeholder collaboration. Rachel received her Master's degree in Environmental and Natural Resources Policy from the George Washington University and her Bachelor's degree in Environmental Planning from the University of Miami.

Margaret Waldock, Geraldine R. Dodge Foundation



Margaret directs the Foundation's Environmental grants and identifies opportunities for Dodge to support innovative and creative approaches to advance sustainability and environmental protection in the Garden State. Prior to joining Dodge in 2011, Margaret was Executive Director of the Hunterdon Land Trust for eight years, where she oversaw an expansion in net assets, staff, members and donors and helped preserve over 5,000 acres of land. As a gardener, she is constantly reminded of the life lessons of gardening: to celebrate the blessings of bounty and accept loss. She has never met an old bicycle she doesn't like and has amassed a collection of 1970's era cruisers. Margaret received a combined Juris Doctor and Masters of Study in Environmental Law from Vermont Law School in 1992.

Special Session Panelists

Trash Talkin'

Moderator: Dee Durham(PDE and BringYourOwnBag.us)

Tom Davidock, PDE and Schuylkill Action Network

Lance Butler, Philadelphia Water Department

Robin Irizarry, Tookany/Tacony-Frankford Watershed Partnership

Kelly O'Day

Shellfish Culture Now and Tomorrow: Charting a Course for Delaware Estuary Aquaculture

Moderators: Daphne Munroe and Lisa Calvo (Haskin Shellfish Research Laboratory)

Mike Deluca, Director, Aquaculture Innovation Center, Rutgers University

John Ewart, Aquaculture Specialist, Delaware Sea Grant

Russ Babb, Chief, Bureau of Shellfisheries, NJ DEP

Will Morey, Cape May County Freeholder, Director of Planning, Education, Engineering and Economic Development

Barney Hollinger, Owner, Elder Point Oyster Company

Marc Zitter, Cape May Oyster Company

Monique Purcell, NJ Department of Agriculture

Monitoring Standards for Tidal Wetland Enhancement Projects

Moderator: Danielle Kreeger (PDE)

Bart Wilson, USFWS, Prime Hook National Wildlife Refuge, Federal Sector

Danielle Donkersloot, New Jersey Department of Environmental Protection, State Sector

Alison Rogerson, Delaware Dept. of Natural Resources and Environmental Control, State Sector

Danielle Kreeger, Partnership for the Delaware Estuary, National Estuary Program Sector

Doug Janiec, Sovereign, Private Sector

Moses Katkowski, The Nature Conservancy, Non-Profit Sector

Capt. Al Modjeski, American Littoral Society, Non-Profit Sector





Thank you for attending the 2015 Delaware Estuary Science and Environmental Summit.

The Partnership for the Delaware Estuary is a nonprofit organization established in 1996 to take a leadership role in protecting and enhancing the Delaware Estuary, where fresh water from the Delaware River mixes with salt water from the Atlantic Ocean. It is one of 28 congressionally designated National Estuary Programs throughout the coastal United States working to improve the environmental health of the nation's estuaries. Its staff works with partners in three states to increase awareness, understanding, and scientific knowledge about the Delaware Estuary, the region's most important cultural, economic, and recreational resource.

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(800) 445-4935 or (302) 655-4990
www.DelawareEstuary.org

The Partnership for the Delaware Estuary, a National Estuary Program, leads science-based and collaborative efforts to improve the tidal Delaware River and Bay, which spans Delaware, New Jersey, and Pennsylvania.

Notes

Answers to “Which Summit Was It?” from top left to bottom right: 2005, 2009, 2011, 2013, 2007

Which Summit Was It?



Answers on page 27

Delaware Estuary Word Search

X F B M V F I A X T S P I S D R I B E R O H S C P
 P A S X E J Z K S I S D N A L T E W R T G S I C B
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Bay
 Delaware
 Ecosystem
 Estuary
 Fisheries
 Freshwater
 Habitat
 Horseshoe Crab

Living Shoreline
 Marsh
 Monitoring
 Mussel
 New Jersey
 Oyster
 PDE
 Pennsylvania

Preservation
 Restoration
 River
 Shorebirds
 Storm Drain
 Tidal
 Watershed
 Wetlands



The **Partnership for the Delaware Estuary**, a National Estuary Program, leads science-based and collaborative efforts to improve the tidal Delaware River and Bay, which spans Delaware, New Jersey, and Pennsylvania.

Photo by Sierra Gladfelter.

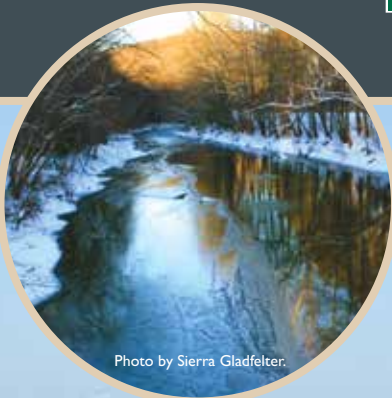


Photo by Sierra Gladfelter.

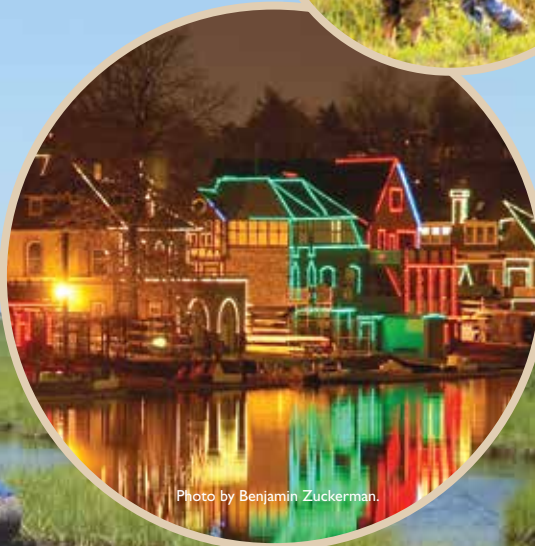


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