

# The Susquehanna River and Agriculture

September 12-13, 2008



The Susquehanna River is the largest contributor of fresh water to the Chesapeake Bay. The huge size of the drainage basin along with today's industrialized agricultural economy makes it difficult for farmers to achieve environmental goals and still be economically viable. Current nutrient-management challenges in the watershed threaten the very survival

of central Pennsylvania agriculture. New solutions are needed. Farmers care deeply about the landscape and are working diligently to minimize impacts to the bay, but the situation is complex and they are facing enormous odds.

- *What is the research telling us?*
- *What things can be done?*
- *How can the public help?*

From the fields, to the streams, to the bay

Agriculture is Pennsylvania's largest industry and vital to the lives of the Susquehanna River Basin.

The goal of this symposium is to bring farmers, scientists and the public together for community-wide discussions about the complex environmental issues facing agriculture and the Susquehanna River.

The presentations and discussions are designed to deepen our understanding, stimulate new insights, and provide direction for the future.



## BRINGING FARMERS, SCIENTISTS, AND THE PUBLIC TOGETHER



The scientific findings on the environmental conditions in the Susquehanna River Basin may appear relatively straight forward at first, but the solutions to these problems are anything *but* simple.

Now is the time for scientists, environmental regulators, farmers agricultural business leaders, and the public to listen to one another and work toward a mutual understanding and vision for a sustainable and healthy future.

FRIDAY, SEPTEMBER 12<sup>TH</sup>

**TODAY'S AGRICULTURE  
IN PENNSYLVANIA**

Agriculture is one of Pennsylvania's leading economic enterprises. Dairy is the state's largest agricultural segment, accumulating \$1.6 billion of cash receipts from the milk and meat sold off of the dairy farms.

Trends in Pennsylvania's agriculture echo those of the rest of the United States and the world as agriculture becomes increasingly industrialized. There are fewer larger farms using more resources to produce food that goes to processing plants and for distribution on a global market.

In the three decades between 1964 and 1997, the number of farms in Pennsylvania declined 45% from 83,066 in 1964 to 45,457 in 1997. The number of farms under 179 acres decreased 49% and the number of farms more than 500 acres increased by 51%.

The acres of harvested croplands decreased 11% while the number of farmers harvesting this land decreased 48%. The number of dairy farms decreased 75%.



**REGISTRATION & COST**

Registration begins at 12:30 p.m. - follow signs for parking and directions to the registration booth, which will be located at the outdoor tent near the center of campus.

A fee of \$10 will cover the symposium materials, a picnic dinner featuring locally-produced food will be held under the tent on Friday evening. A luncheon will also be offered on Saturday. Student research posters and keynote speakers will be featured at both meals.

Students will help direct visitors to parking and Friday evening's festivities.



**Friday's Schedule**

**12:30-4:00 pm** (*Outdoor Tent*)  
Registration.

**1:30-3:30 pm** (*Trout Auditorium*)  
Presentations on Native American agriculture in the Susquehanna Valley.

**4:00-5:30 pm** (*Outdoor Tent*)  
Display booths and picnic dinner featuring locally-produced food. Music by KJ Wagner.

**5:00 pm** (*Outdoor Tent*)  
Presidential welcome by university provost Michael A. Smyer, opening comments by U.S. Congressman Chris Carney, and keynote address by Dennis Wolff, Pennsylvania Secretary of Agriculture.

**7:00 - 8:00 pm** (*Trout Auditorium*)  
Preview of documentary film on Pennsylvania farming *Hearth and Harvest*, produced and directed by WVIA, Wilkes-Barre Scranton.

**8:00 - 9:30 pm** (*Langone Center*)  
Student research poster session and evening social featuring locally-produced wines and grapes.

**Special Guests**

**DENNIS WOLFF**



Master farmer and Pennsylvania Secretary of Agriculture.

**CHRIS CARNEY**



Penn State University Professor and U.S. Congressman representing the 11th Pennsylvania district.

**K.J. WAGNER**



Folk singer/songwriter and native of the Susquehanna Valley, K.J. performs original works about agriculture and farm life for audiences worldwide.

SATURDAY, SEPTEMBER 13<sup>TH</sup>



**Special Guests**

**CATHLEEN MYERS**



Moderator of the morning's technical sessions, Cathleen is Deputy Secretary for Water Management, PA Dept. of Env. Protection.

**PAUL SWARTZ**



Keynote speaker at Saturday's luncheon, Paul is Executive Director of the Susquehanna River Basin Commission.

**MARK LAWRENCE**



Moderator of the afternoon's roundtable discussions, Mark is the anchor and program director for WKOK 1070 newsradio.

**GARY HOLTHAUS**



Noted speaker and author on sustainable agriculture and ethics, Gary will close out the afternoon's session.



**MORNING**

**The Scientific Dimension**

Moderated by Cathleen Myers  
Pennsylvania DEP

Trout Auditorium  
Bucknell University

**8:15 am**

*Welcome and opening comments*  
James Rice, Bucknell University

**8:30-8:55 am**

*Opening address: Agriculture and the Susquehanna River*  
Cathleen Myers, PA DEP

**8:55-9:20 am**

*Nutrient loads in the Susquehanna River*  
Karl Brown, PA Dept. of Agriculture

**9:20-9:45 am**

*Sediment loads in the Susquehanna River*  
Allen C. Gellis, U.S. Geological Survey

**9:45-10:30 am**

*Break and Poster Sessions (Terrace Room)*

**10:30-10:55 am**

*Agriculture, the Susquehanna River and epidemiological connections*  
Brian Swartz, Geisenger Center for Health Research

**10:55-11:25 am**

*Scientific Panel Discussion*  
Speakers entertain questions from audience and address related issues

**11:25-11:50 am**

*Commentary and Reflections*  
Marel Raub, Chesapeake Bay Commission

**11:50 am - 12:00 pm**

*Move to Terrace Room for lunch*

**LUNCH**

The Terrace Room  
Langone Center, Bucknell University

**12:00-1:00 pm**

*Keynote Address*  
Paul O. Swartz, Executive Director  
Susquehanna River Basin Commission

**AFTERNOON**

**The Agricultural Dimension**

Moderated by Mark Lawrence  
WKOK Radio/Sunbury Broadcasting

Trout Auditorium  
Bucknell University

**1:20-1:40 pm**

*Buy Fresh, Buy Local*  
Trish Carothers, SEDA-COG

**1:40-2:00 pm**

*A Farm Market Example*  
Alan Ard, Ard's Farm Market

**2:00-2:20 pm**

*The commercial farmer's perspective*  
Jim Brubaker, Pennsylvania Farm Bureau

**2:20-2:40 pm**

*The sewage treatment dilemma*  
Preston Boop, farmer and Union County Commissioner

**2:40-3:00 pm**

*Nutrient trading*  
Cathleen Myers, PA DEP

**3:10-3:55 pm**

*Agricultural panel discussions*  
Speakers entertain questions from audience and address related issues.

**4:00-5:00 pm**

*Reflections by Gary Holthaus*  
Noted speaker and author of "From the Farm to the Table: What All Americans Need to Know About Agriculture"

**5:00-5:30 pm (Bertrand Library)**

*Photographic exhibition of Native Americans in the 21st Century, by Obaidulla Mamoon.*



THE SUSQUEHANNA RIVER AND THE CHESAPEAKE BAY

The Susquehanna River (originally “*Sasquesabanough*” on the 1612 map by John Smith) is approximately 444 miles (715 km) long. It is the longest river on the American east coast and the 16th longest in the United States.

The Susquehanna has two main branches, with the North Branch, which rises in upstate New York often regarded as an extension of the main branch. The shorter West Branch, which rises in western Pennsylvania, is often regarded as the principal tributary, joining the North Branch near Northumberland in central Pennsylvania.

The river drains 27,500 square miles (71,225 km<sup>2</sup>), covering nearly half of the land area of Pennsylvania and portions of New York and Maryland.

The Susquehanna empties into the northern end of the Chesapeake Bay at Havre de Grace, Maryland, providing half of the freshwater inflow for the bay.

The Susquehanna receives sediment and pollution from stream channel erosion, agricultural runoff, urban and suburban storm water, raw or inadequately treated sewage, and abandoned mine drainage. The U.S. Environmental Protection Agency (EPA) has identified suspended sediment as the most critical pollutant to mitigate.

In 2003 the Susquehanna River contributed 21% of the sediment, 44% of the nitrogen, and 21% of the phosphorus flowing into the Chesapeake Bay. Pennsylvania may be subject to federal sanctions if it does not reduce its pollution by 2010.

In 1997, the U.S. Environmental Protection Agency designated the Susquehanna as one of the *American Heritage Rivers*.

However, recent assessments of the watershed’s health vary considerably. In 2005, for example, the agency American Rivers identified the Susquehanna as *America’s Most Endangered River* while the



Pennsylvania Department of Conservation and Natural Resources awarded the West Branch of the Susquehanna the *River of the Year*.

More work between scientists, farmers, and public agencies is needed to arrive at an accurate assessment of the river and identify ways to improve conditions in the watershed.



Image courtesy of NASA.

“A healthy Susquehanna River system will enhance the quality of life of Pennsylvanians and will dramatically improve the health of the Chesapeake Bay.  
Failing to clean up the river could have a huge economic impact on Pennsylvania.”  
- American Rivers, 2005



FROM THE FARM TO THE TABLE: WHAT WE NEED TO KNOW ABOUT AGRICULTURE

Gary Holthaus believes farmers all over the world have begun to choose a new path - a way of farming that is enjoyable and profitable for the farmers, leaves a small footprint on the planet, and makes a beneficial contribution to rural communities.

Gary is the former director of the Northern Plains Sustainable Agriculture Society and now working with Alaskan school system on teaching sustainable agriculture. His new book, *From the Farm to the Table*, explores farmers' experiences to offer a deeper understanding of how we can create sustainable and vibrant land-based communities by cultivating agrarian values.

Holthaus also wrote *Learning Native Wisdom: Reflections on Spirituality, Subsistence, and Sustainability*, a treatise on sustainable communities and their foundation in a meaningful spiritual life. Holthaus argues that life is not just a function of economy but of "manners, ethics, respect, the way we live."

An ordained minister and long-time resident of Alaska before moving to Red Wing, Minnesota in

1995, Holthaus has held readings around the world. A published poet and essayist, he has conducted numerous writing workshops, been interviewed for Public Radio, worked in theater, and been a big-game guide in Montana along with a lifetime of social justice work.

Mr. Holthaus will present the closing talk at the symposium at 4 pm Saturday in Trout Auditorium.



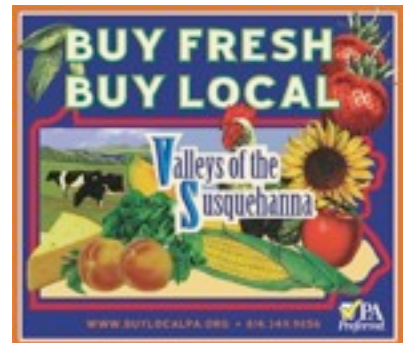
FARMING SUSTAINABLY IN THE SUSQUEHANNA RIVER WATERSHED



Sustainable agriculture seeks to assure agricultural profitability by maximizing on-farm resources in ways that maintain or improve the productivity of land and water resources while protecting the environment. Sustainable strategies encourage the farmer to produce diversified value-added products through a mutually beneficial relationship with the local community.

- **Input Optimization** - family labor, intensive grazing systems, recycled nutrients, legume nitrogen, crop rotations, use of renewable solar energy, improved management of pests, soils and woodlands.
- **Diversification** - vary crops and livestock systems to lower economic risk from climate, pests, and market fluctuations.
- **Conservation of Natural Capital** - create economic value by maintaining the productivity of land and water resources while enhancing human health and the environment.
- **Capturing Value-Added** - form coops of local farmers and a collaborative relationship with the local community.

- **Community** - make urban communities more aware of the entire food production and distribution system.  
We must rekindle a sense of caring about the welfare of our neighbors in order for viable rural and urban communities to survive.



# The Susquehanna River and Agriculture

*From the fields, to the streams, to the bay ...*



## FRIDAY, SEPTEMBER 12

**1:30-3:30 pm** (*Trout Auditorium*)  
Native Americans and agricultural practices in the Susquehanna Valley

**4:30-5:30 pm** (*Outdoor Tent*)  
Picnic meal and festival featuring locally grown food and refreshments. Entertainment by KJ Wagner.

**5:30 pm** (*Outdoor Tent*)  
Keynote addresses by U.S. Congressman Chris Carney and PA Secretary of Agriculture Dennis Wolff.

**7:00-8:00 pm** (*Trout Auditorium*)  
Preview segments of documentary on Pennsylvania agriculture.

**8:00-9:30 pm** (*Trout Auditorium*)  
Student research posters and evening social featuring local wines.

## SATURDAY, SEPTEMBER 13

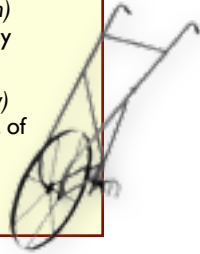
**8:30 am-12:00 pm** (*Trout Auditorium*)  
Scientific presentations and poster sessions.

**12:00-1:00 pm** (*Terrace Room*)  
Lunch and keynote address by Paul Swartz, director of the Susquehanna River Basin Commission (SRBC).

**1:00-4 pm** (*Trout Auditorium*)  
The agricultural dimension.

**4:00-5:00 pm** (*Trout Auditorium*)  
Reflections by noted author Gary Holthaus.

**4:30-5:30 pm** (*Bertrand Library*)  
Opening of photographic exhibit of Native American in 21st century by Obaidullah Mamoon.



**Bucknell**  
UNIVERSITY

**ENVIRONMENTAL CENTER**  
Bucknell University  
Lewisburg, Pennsylvania 17837  
[www.bucknell.edu](http://www.bucknell.edu)

This symposium is sponsored in part by a grant from the Henry Luce Foundation in support of Bucknell University's *Susquehanna River Initiative*.

