



# Musconetcong River News

Summer 2012

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Asbury, New Jersey

## Solar Farms in the Watershed

By Beth Styler Barry

We've all been hearing more about solar farms and seeing them pop up throughout the watershed. Several people have asked what the MWA thinking is on these large arrays of photovoltaic cells (PVCs). I decided to take a very informal look at them from a watershed point of view.

A solar farm is defined as an area where multiple ground mounted solar panels are installed; the number can range from a few dozen panels to tens of thousands of panels. In most cases power goes directly from these farms back to the grid. Most solar power is generated midday when residential demand is low and sending it back to the grid means that power is not wasted. On-site batteries are rarely used because battery storage is expensive and not very efficient. ([www.convergence-energy.com](http://www.convergence-energy.com))

So, what accounts for the recent proliferation? New Jersey's renewable energy tax credits, rebates, grants and state and local incentives have made NJ one of the fastest

growing states where solar installations are concerned. In addition, in 2009 the definition of "Inherently Beneficial Use" in the NJ Municipal Land Use Law (MLUL) was amended to read "a use which is universally considered of value to the community because it fundamentally serves the public good and promotes the general welfare". Solar farms are included in the list of beneficial uses. An Inherently Beneficial Use presumptively satisfies the criteria for the grant of a variance under the MLUL 40:55D-70.

On April 22, 2010, Governor Christie signed a law that exempts solar panels from the calculation of impervious cover under a number of state laws. While the solar panel itself is obviously impervious, regulators contend that groundwater recharge and stormwater runoff are not altered by a solar array in the same way as they are with true impervious surfaces, pavement or buildings, for example. The area where the solar panel attaches to the ground – the base or foundation – is still deemed impervious.

This exemption effects the calculation of impervious coverage under several laws including the Highlands Water Protection and Planning Act and the Municipal Land Use Law, as well as laws related to county site plan approvals and stormwater management plans.

So, for the MWA the pertinent question is "what does the proliferation of solar farms in Musconetcong Watershed mean for the health of the watershed"? What is the impact to surface and groundwater quality and quantity? What do solar farms mean in terms of the MWA's mission to protect and improve the quality of the Musconetcong River Watershed, including its natural and cultural resources?

I believe that the most important consideration in working through these questions is "what are the alternatives to solar on this site?" If USDA Prime Farmland or Soils of Statewide Importance are being pulled out of production to create a solar farm it means one thing; if the alternative is 30 (or 300)

*"As with many questions that involve complex environmental and social issues, I do not think that there is a simple, one size fits all, answer to the question "Are solar farms good or bad for the watershed?"*

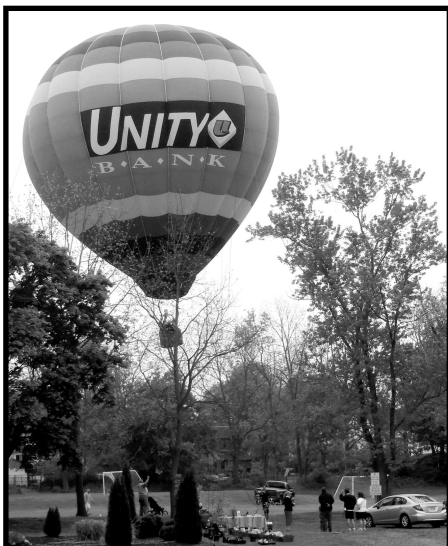
MWA Executive Director  
Beth Styler Barry

houses it means another. If a solar array is placed on a Brownfield or superfund site, it's hard to argue against this use.

In terms of water quantity my very informal investigation leads me to believe that there will not be a loss of groundwater recharge on site. In the facility I visited at Hawk Pointe Golf Course and at the site visited in the Great Swamp Watershed by MWA Trustee Emeritus Chuck Gullage, we saw no signs of erosion along rows of panels or other evidence of the concentration or redirection of runoff. Both sites visited had vegetation under the panels, which encouraged recharge and would not increase downstream flood risk. At Hawk Pointe the plantings under the panels were all native species providing a food source for birds and insects.

In terms of an effect on water quality it seems that unless the panels are replacing an organic farm, stormwater runoff or water recharged on a solar farm would likely be of higher quality than that on land in where crops are grown. Harvesting sun requires no fertilizer or pesticide use. During installation of the panels care would need to be taken to manage any area of disturbance to prevent runoff of soil to local streams.

Thus far I have discussed placing these arrays in open fields; the removal of trees or other vegetation to accommodate installation is a completely different story. MWA would not endorse the cutting down of trees for placement of these arrays, particularly within a 300' buffer of the Musconetcong River or any of its tributaries. These areas must be reserved for riparian buffers; this mix of



*Tethered balloon rides, donated by new sponsor Unity Bank, provided a great view of the 2012 Run for the River for runners, walkers and spectators, details on page 3.  
Photo by Ron Saxon*

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## SOLAR *Continued from page 1*

trees, shrubs and grasses must always remain untouched or be restored when possible.

Another concern, although I do not think that we will see large enough arrays in our watershed, is the fragmentation of habitat. Large arrays can disturb the migration pathways or disconnect ecosystems, a very real concern in the huge arrays being installed out west.

MWA supports renewable energy - especially when it is locally produced and, better yet, locally used - to reduce the impacts of climate change, protect air and water quality and reduce reliance on fossil fuels. As with many questions that involve complex environmental and social issues, I do not think that there is a simple, one size fits all, answer to the question "Are solar farms good or bad for the watershed?" MWA and hopefully watershed communities will need to evaluate each installation in light of the issues raised above.

# MUSCONETCONG WATERSHED ASSOCIATION

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[www.musconetcong.org](http://www.musconetcong.org)

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## What the State Agriculture Development Committee (SADC) says about Solar Farms

*From a presentation titled "On-Farm Solar Energy Generation" by Susan E. Craft, Executive Director, State Agriculture Development Committee to the Hunterdon County Panning Board*

Energy generation is considered to be an agricultural use on **farmland assessed** land provided certain criteria are met, including: No more than 10 acres in solar generation, a 1:5 ratio of solar generation to agricultural use is maintained, no more than 2 megawatts (MW) generated, and land under the solar panels must be used to the greatest extent practicable for the farming of shade or

other crops, or for pasture for grazing.

Solar generation on **preserved farms** must meet the above criteria and are limited in annual energy generation capacity to 110% of the previous calendar year's energy demand. Solar arrays must not occupy more than 1 percent of the area of the entire farm, arrays must be owned by the landowner and power must be used to provide power or heat to the farm, either directly or indirectly, or to reduce energy costs on the farm. Arrays cannot interfere significantly with use of land for agricultural production.

In both cases soil disturbance must be approached with the overall goal being to ensure land can be returned to agricultural production.



A group of about 20 people hiked the Musconetcong Gorge trail on April 21st. The group was led by John DeMarrais of NJ Audubon who shared his knowledge of plants and birds along the trail.

MWA Water Monitoring Coordinator Nancy Roberts Lawler and Executive Director Beth Styler Barry presented at the National Water Quality Monitoring Conference in Portland, Oregon in April.



## A Very Busy Spring

By Beth Styler Barry

In April I spent a week at the U.S. Fish and Wildlife Service National Conservation Training Center in Shepherdstown, WV where I attended an Applied Fluvial Geomorphology class. Fluvial Geomorphology is a science devoted to understanding how natural conditions and human land use in a watershed determine the shape and stability of the river channel. Understanding these things allows for the design of better restoration projects.

Our class of 44 students spent time in class reviewing the calculations and equipment used to characterize stream conditions - sinuosity, pebble count, slope, width/depth ratio, channel dimensions and patterns, cross section and longitudinal surveys etc. - and then we set out to do some field work. It was great to have time set aside to focus on this science.

Information from the course will be helpful in evaluating in-stream restoration structures, such as those used at the Gruendyke, Riegelsville and Finesville dam removal projects, and to evaluate the resulting adjustment of the channel to the new structure up and downstream of the projects.

# 2012 Run for the River

Tethered balloon rides, a lollipop run, and records broken all round... a record number of participants and sponsors too.

Another great event put together by the MWA staff, trustees and hard-working volunteers. The weather was perfect, cool for the starting lines and although threatening rain clouds loomed, they kept the heat at bay. Clouds dissolved to make way for warmer temperatures and sunshine in time for lollipop runs, awards ceremony and raffle. Thank you to MWA trustees for making this a record breaking sponsored event. Special kudos goes to MWA Vice President, Cinny MacGonagle for her many hours of phone calls, bringing in the most new sponsors single handedly. In all we totaled 26 sponsors.

Our new sponsor \_\_\_\_\_ and Patrick and Barbara Banes were responsible for allowing us to offer free tethered balloon rides. It was a beautiful sight to see the balloon rising and falling in the background among excited runners, walkers and spectators on race day. **A Therapeutic Touch's** \_\_\_\_\_ was on hand with free mini massages for all the participants before and after the run.

\_\_\_\_\_ kept the mood festive from beginning to end. Donating his musical magic again this year was Dave Werkhiser of \_\_\_\_\_.

Our volunteers, which we could never do without, handled every phase of the event including all the new activities and handled details from pre race day to post clean up with such ease you would think they had been doing this for a long time... and many of them have! We are humbled and grateful for their dedication to MWA.

The day held something special for the younger ones, the MWA runners of the future were able to get a taste of what lies ahead by participating in our lollipop run. Everyone came out a winner with a sweet treat for participating and a chance to try out their legs!

MWA would like thank all our Run sponsors and donors. Please support them when you can.

Unity Bank  
 Patrick and Barbara Banes  
 Friends of the River  
*Community sponsorship*  
 Borealis Compounds LLC  
 Princeton Hydro  
 Hawk Pointe Golf  
 Hackettstown MUA  
 Rockefeller Development Group  
 Sanico  
 M&E Engineers  
 Covanta  
 Fox Lumber

Paddler's Cove  
 Four Paws Playground  
 Perryville Wine and Spirits  
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 the Witte Company  
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 M&M Mars  
 Metropolitan Seafood Gourmet  
 Countryside Studios  
 Muheisen's Hot Bagel and Deli  
 ShopRite of Mansfield  
 ShopRite of Washington  
 ShopRite of Greenwich  
 Weis of Hackettstown

*Congratulations  
 to overall winners  
 Chris Martalus  
 22:17 and Lauren  
 Belsky 29:42*

*Over 200 people  
 ran or walked  
 in the Run for  
 the River. We  
 thank all who  
 participated for  
 making this our  
 best year ever!*

*Thank you to  
 Muheisen Bagels  
 of Washington for  
 supplying the  
 bagels for this  
 year's run.*

## River Watcher Year 5: Where do we go from here?

*By Nancy Lawler*

The MWA River Watcher program has been collecting water quality data at four sites on the main stem of the Musconetcong for five years! The biological, chemical and physical data our volunteers have collected have helped our organization create a great base of information on what the conditions are at those locations. The data have also been used to help us track the progress of some of the restoration projects on the river. In March of this year, the MWA's Technical

Advisory Committee (TAC) met to look at our data and helped us figure out what data still needs to be collected to further our understanding of the river and surrounding watershed.

The TAC is a group that advises MWA on how, where, and when we should monitor so the River Watcher program can collect high quality data. Our committee is currently made up of Dr. Josh Galster of Montclair State University, Ralston Bartholomew of Warren County Community College, and

Matthew Cordova from Accutest, Inc, our highly experienced River Watchers Chuck Gullage and Stu Shafran, Nancy Lawler, the Water Quality Program Coordinator and Beth Styler Barry. The TAC looked at all of the data the volunteers have collected, reviewed our methods, and made suggestions of where we should monitor next.

The TAC determined that MWA now has a good set of baseline data on the main stem

**Continued on page 4**



*The Blaine Family worked hard all morning and we'd like to give a shout out to Heart and Soul Handyman Services, Belvidere, NJ 07823 Contact Dave Blaine Cell: (908) 455-0447*



*Members of the Earl Schweibert Chapter of Trout Unlimited relax at the River Resource Center. We can always count on these guys to work the lower river.*



*Gotta love those hard working Franklin Township Brownies - enjoying a hard earned lunch on the porch at the RRC.*



*Restoration of the Finesville site continues In April MWA Trustee and Master Gardener Canny MacGonagle talked with contractors from Applied Environmental Services about the seed mix being applied.*



*In mid-May birder Brian Butler captured a mother wood duck and 12 ducklings out for a swim at the mill pond at the MWA River Resource Center.*

**RIVER** *Continued from page 3*

of the river. Our advisors believe that we should start looking at the health of the tributaries and work to address any challenges we may encounter there. Tributaries are an important part of the ecosystem for aquatic organisms including trout, which spend time in the main stem, but spawn and seek refuge in the cool, clean waters of the tributaries. So, it is essential for us to understand the health of the tributaries when taking a "watershed" approach to protecting river health and planning or maintaining restoration projects.

We will look this year at what kind of data is available on the tributaries and make plans to set up at least one new monitoring location and retire an existing site. We are always looking for people who

might want to be on our Technical Advisory Committee: if you think that your background would be helpful, please call Nancy Lawler at the MWA office.

WANTED!

# SAVE THESE DATES!

- **Monday, July 16 - 1st Annual MWA Golf Outing - Playing to the Nines.**

New event! Please pass this along to all you know who enjoy the game of golf!

Enjoy your 9-hole tease of the Hawk Pointe Golf Club's championship course with a world of personal service which will be followed by a gourmet lunch, exciting prizes and a silent auction! Outdoor enthusiasts and golfers alike indulge in the regally appointed clubhouse, private wine room, innovative cuisine, year-round activities and an idyllic setting. If you cannot attend, please consider the sponsorship opportunities available at all levels. You can Register or Sponsor online at <http://www.musconetcong.org/golfouting.php>

- **Tuesday July 24th, 6:00 p.m. – 7:30 ish. Point Mountain Riverwalk Trail**

Join us for this easy flat hike that is perfect for young children, families and those ready to get back into outdoor activity. Large boulders and sycamore trees line the edge of this riverside trail. We'll meet on the Point Mountain Road parking lot, you can use this address for your gps, 80 Point Mountain Road, Washington 07882. MWA members are free, nonmembers are asked to donate \$3 per person with an \$8 family maximum. Bring a snack, water and binoculars if you'd like. All are welcome, novice and expert alike.

- **Camp Musky - Summer Day Camp 2012**

MWA's Camp Musky will bring your children on an exciting hands-on, outdoor learning adventure. Campers will explore the beautiful MWA River Resource Center property and the adjoining, preserved 30 acres of meadow, woods and wetlands. MWA believes that the most meaningful learning experiences for children come from immersion in the natural world. Each program runs from 9:00 a.m. - 1:00 p.m. Monday through Friday with the exception of the 5-6 yr program which is Tuesday through Friday.

**July 9-13, (Session 1) "CSI Riverside" Ages 7 – 9 yrs,**

**July 16-20, (Session 2) "CSI Riverside" Ages 7 – 9 yrs,**

**July 23-27, "Survivor" Ages 10 - 12 yrs,**

**August 7-10 "The Explorer" Ages 5 - 6 yrs**

- **Meet the River Program**

Multiple Dates, see below This summer the Meet the River program will run from 10:00 a.m. till noon and will be held at several locations in the watershed listed below. This program allows children to come down to the river's edge and splash around in the water. We'll turn over some rocks and maybe we'll be lucky enough to catch a frog! MWA members free, Non-members will be charged a \$4 donation per child (\$10 limit per family.)

- **Saturday, July 14**

Point Mountain Preserve: Point Mountain Road, Port Murray

- **Wednesday, July 18**

Point Mountain Preserve: Point Mountain Road, Port Murray

- **Saturday, July 28**

Asbury: NJ DEP Bloomsbury Fishing Access, 253 Bloomsbury Road, Asbury, NJ 08802

- **Wednesday, August 1**

Asbury: NJ DEP Bloomsbury Fishing Access, 253 Bloomsbury Road, Asbury, NJ 08802

- **Saturday, August 4**

Byram: Riverside Park, River Road (off of Route 604) in Byram Township

**For more information or to register for any of these events please call 908-537-7060 or email [adrienne@musconetcong.org](mailto:adrienne@musconetcong.org)**

**Note:** If you are not receiving e-mail reminders for these events it means that we do not have a current e-mail address. If you'd like to receive reminders and occasional "Musky News Briefs" please contact [beth@musconetcong.org](mailto:beth@musconetcong.org).

- ◆ Save These Dates
- ◆ River Watcher Year 5: Where do we go from here?
- ◆ 2012 Run for the River
- ◆ A Very Busy Spring
- ◆ Solar Farms in the Watershed

What's Inside:

Musconetcong River News



Asbury, NJ 08802  
PO Box 113



## The Musconetcong Watershed Association

The Musconetcong River Valley is rich in scenery, history, natural resources, and recreational opportunities. The river rises up in Lake Hopatcong - New Jersey's largest spring-fed lake - and is shadowed by 1,000-foot Highland ridges and slices through a deep, limestone river valley, flowing swiftly to the Delaware River. Along the way the "Musky" passes by state and county parks, bustling towns, vital industries, historic villages, and some of the most productive farmland in the state.

The Musconetcong Watershed Association (MWA) is a non-profit organization formed in 1991 to protect and enhance the Musconetcong River and its related resources through advocacy and environmental education programs, scientific research and river restoration projects. The MWA scope spans the 158 square-mile Musconetcong River Watershed, and includes portions of four counties, and all or portions of 25 municipalities. The Musconetcong River became part of the National Wild and Scenic River System in 2006.

MWA members are part of a network of individuals, families and organizations who care about the Musconetcong River and its watershed. They are kept informed about issues concerning the river and its related resources by receiving quarterly issues of the *Musconetcong River News*.

## MWA Membership Application

Please enroll me as a member of the Musconetcong Watershed Association in which I will receive membership benefits and publications. I have enclosed a check payable to **MWA** for the membership category listed below:

- |   |  |
|---|--|
| <input type="checkbox"/> \$20 Student         | <input type="checkbox"/> \$100 Sustainer |
| <input type="checkbox"/> \$30 Family          | <input type="checkbox"/> \$250 Steward   |
| <input type="checkbox"/> \$50 Supporter       | <input type="checkbox"/> \$500 Champion  |
| <input type="checkbox"/> \$1,000+ Life Member |  |

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_

Mail to:

**Musconetcong Watershed Association**  
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