CHESTER RIVER ASSOCIATION

CRA

CURRENTS

The Yearly Journal of the Chester River Association • Vol. 21 • 2011

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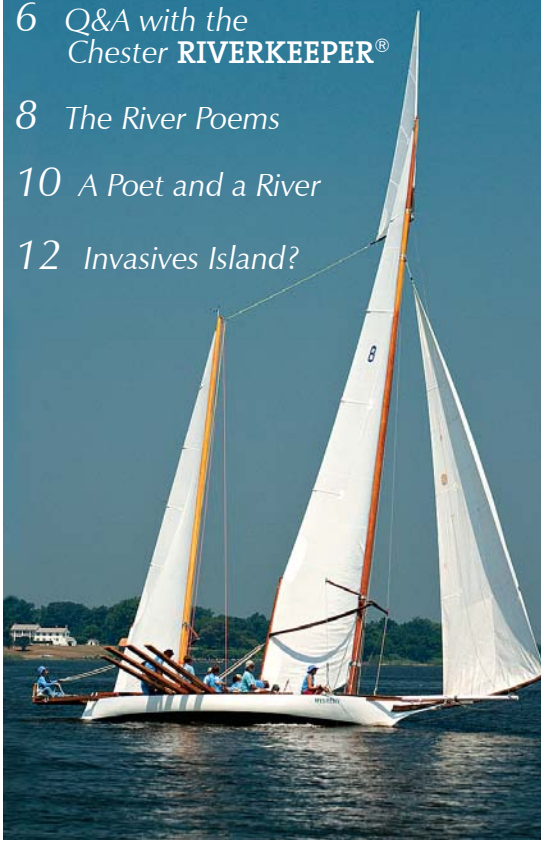

Letter from the PRESIDENT

Michael Moore

For over a quarter of a century, the six states comprising the Chesapeake Bay watershed and the District of Columbia have signed numerous formal agreements to restore the Bay and its tributaries. Each time they have failed to execute them successfully. As a result of the repeated failures, the U.S. Environmental Protection Agency has stepped in to force the states and Washington to meet a pollution budget known as the Total Maximum Daily Load. The TMDL sets limits on nitrogen, phosphorus and sediment loads that enter our tributaries and the Bay from each of the respective jurisdictions.

For those determined to restore the Chester, the TMDL process represents the elusive leverage missing from all previous agreements to force the states to make clean water a reality. The 28-year history since the first Bay agreement signing in 1983 has proven the job is too large and complex for independent state action to be successful.

Unfortunately, there is agricultural and political opposition against EPA's new Bay-saving initiative. The American Farm Bureau has filed a lawsuit in an attempt to block the clean-up plan. The House of Representatives, with our Congressman Andy Harris's support, approved a bill that would prevent the EPA from spending money to implement the plan. One of the opposition's arguments is the familiar cost objection to reducing pollution. Their economic analysis, however, is incomplete in that it estimates only the cost of complying with the TMDL while failing to factor in

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About the CHESTER

The Chester River meets the Chesapeake Bay at Eastern Neck Island. From its headwaters in Delaware to its mouth at Love Point, its mainstem stretches 60 miles and is fed by 43 named tributaries. The Chester is a natural boundary between Kent and Queen Anne's counties, with a watershed that covers more than 390 square miles. Open to everyone, CRA was founded in 1986 and established its Chester **RIVERKEEPER®** program in 2002. Through meetings, forums, field trips, publications, habitat restoration projects, the Chester Testers and collaboration with community groups and government agencies, CRA strives to improve water quality and increase public awareness of river and watershed issues. Call us at 410-810-7556. Chester **RIVERKEEPER®** David Foster can also be reached at 410-810-7556. Our office address: CRA, 100 N. Cross Street, Suite One, Chestertown, Maryland 21620. Email: info@chesterriverassociation.org. Our web address: www.chesterriverassociation.org. Anyone who would like to get involved in CRA's river work is encouraged to get in touch.

Chester River Association MISSION

Chester River Association is an advocate for the health of the Chester River and the living resources it supports. CRA strives to promote stewardship of the Chester River – its forests, marshes, fields, creeks and streams – as well as an understanding of the river's place in the economic and cultural life of our communities. In its efforts to improve water quality, educate the public and facilitate resolution of river-related issues, CRA is a voice for the Chester River.

The Chester River Association and its Chester **RIVERKEEPER®** program are members of Waterkeeper Alliance, Inc., an international network of river, bay, lake, coast and soundkeepers dedicated to restoring our waterways.

WATERKEEPER® ALLIANCE MEMBER

CHESTER RIVER ASSOCIATION CRA

Annual MEETING

Last winter, Maryland Natural Resources police seized 13 tons—that's right, tons—of rockfish in illegal fishing nets. The poachers could not have timed it better.

With the state General Assembly newly convened, horrified lawmakers rushed to push out legislation to deter watermen from poaching in Chesapeake Bay waters.

As John R. Griffin, Secretary of the Maryland Department of Natural Resources, frames it: "The floodgates opened. It was a silver lining in an otherwise dark cloud."

The outcome? A slew of bills that gives Natural Resources police increased enforcement powers and ratchets up the penalties for illegally harvesting fish and oysters. By some estimates, nearly half the oysters growing on off-limits sanctuaries have been poached in recent years.

Griffin, in his keynote address at Chester River Association's upcoming annual meeting, will touch on several talking points that are of concern in the Chester River watershed. Notably, much of the Chester and Corsica are oyster sanctuaries. In one high-profile case in April, the Maryland Attorney General's environmental crimes unit obtained criminal convictions against three watermen who removed oysters from a sanctuary known as Possum Point in the Corsica River.

Griffin, who has served four Maryland governors, calls poaching a "severe" problem that is compromising the sustainability of fish and oysters in the state's waterways. But he is hopeful that the new deterrents along with an electronic surveillance program will put a dent in it.

One law gives Natural Resources police authority it had sought for years to do on-the-spot inspections below the deck of a boat, on work trucks and in watermen's places of business. Previously, police had to obtain a search warrant but by the time they return to shore and get one, poachers have already gotten rid of their stash.

Other laws substantially increase the penalties for illegal harvesting, including jail. They also make it easier for DNR to revoke watermen's licenses.

The state, through a federal homeland security grant, is also keeping an electronic eye on the Bay and its tributaries. The surveillance of vessels in key asset areas like Calvert Cliffs and the port of Baltimore is driven by security concerns. A side benefit: Monitors at a new command center at Sandy Point State Park are also able to track watermen's boats.

"Basically, we can take an oyster sanctuary and put an electronic fence around it," Griffin says. "If a boat goes into a sanctuary and it stops, we know it."

When suspicious activity is noted, police marine units closest to the location are alerted by pager. Additionally, surveillance is videotaped at great levels of resolution, which is good for the evidence locker. At the moment, radar cameras cover nearly 40 percent of the Bay and its tributaries.

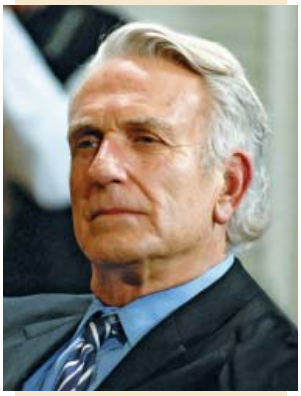
With fewer Natural Resources police in the field due to budget cuts, Griffin calls the electronic surveillance "a terrific force multiplier."

Griffin has served as DNR Secretary under two governors, Parris Glendening and Martin O'Malley. A veteran public servant, he was senior environmental advisor to former Gov. Harry Hughes. He was the department's deputy secretary during William Donald Schaefer's tenure.

Going forward, he said, one of the state's biggest challenges continues to be sprawl development. "It chews up landscapes and habitat important to our mission, and creates more and more nutrient runoff into the Bay," he noted. Another struggle: How do you build or rebuild sustainable populations of finfish and wildlife at a time traditional industries—whether it's watermen, the seafood industry or forest owners—are hurting?

"Trying to do what we have to do in terms of harvest cutbacks to rebuild populations becomes that much more difficult," said Griffin, whose department has faced its own challenges in a budget-cutting environment. "We're doing our best to keep the more important priorities in focus and let other ones slide. No one said it was going to be easy."

—Ellen Uzelac



Courtesy of DNR

Date:
Thursday, June 16

Speaker:
John R. Griffin

Topic:
"Poach at Your Peril
&
Other Lessons
Learned"

Place:
Casey Academic
Center
Washington College

Time:
7:30 p.m.

Free and open
to the public.

Join us for light
refreshments
at 7 p.m.

Watershed at FOREFRONT of Next Gen Farming

By Ellen Uzelac

Most of the Chester River watershed is agricultural—but how much do you really know about the farms that populate the region? At first glance, this pastoral collection of barns, fields and rigs looks much as it did a half-century ago. So much for appearances.

Behind the scenes, farmers are using technological tools to schedule irrigation drips, detect crop damage and apply fertilizer in ways that produce both economic and environmental benefits. They're using GPS auto-steer systems on their tractors to avoid costly overlaps in the field when fertilizing. Up next: smartphones that can be programmed to feed livestock or load a truck.

As Kent County farmer Dave Hill puts it: "Hollywood still paints the farmer as a dumb guy in bib overalls. Nothing could be further from the truth."

Welcome to Farming 2.0—or "precision agriculture," as it's called. Locally, next generation farming practices could have a sizable impact on the health of the watershed, particularly as they relate to the application of nitrogen fertilizer on corn crops. Excess nitrogen, of course, leads to impaired water quality. Chester River Association, with an assist from the University of Maryland, has thrown its resources behind a project to give two local farmers GreenSeeker systems to help them apply nitrogen better and smarter. Separately, UMD and the University of Delaware have applied for an "innovation grant" from the National Resources Conservation Service that would put 11 more GreenSeekers on the ground across the Delmarva peninsula.

"We're on the front edge here because of the pressures on the Chesapeake Bay. We're poised for it. We've got environmental pressure and we have economic pressure because our land has such value," according to Josh McGrath, an assistant professor of soil fertility and nutrient management at UMD. "These are your early adopters. We hope it will be that spark—that kernel—that variable rate nitrogen precision agriculture grows out of. It's like the first time someone bought a tractor and the guy next door is still driving a plow with a horse. It could change everything."

What exactly does that mean? Potentially, a lot. It is UMD that makes annual nitrogen application recommendations to the state's farmers. Under state law, farmers cannot exceed the guidelines. It's a flat rate—generally one pound of nitrogen per bushel of expected yield. That rate is based on yield goals, previous crops, previous organic nitrogen applications and the method of application. But it doesn't take into

Kent County farmer Bunk Miller is participating in the GreenSeeker project.

account real-time climactic conditions or variability across a field within a season.

"I'm a scientist, a skeptic by nature. This could fall on its face. But if this thing is successful, I believe we will rethink how we've recommended nitrogen rates to farmers for over 50 years," said McGrath. "By addressing weather and variability, nitrogen use efficiency should increase, boosting the farmers' bottom line and decreasing potential nitrogen losses to the environment. This would represent a major shift. And that would be radical change."

Courtesy of GreenSeeker

Ideally, GreenSeeker applies fertilizer when corn is about knee-high.

Back to the future

At its ideal, precision agriculture means applying the correct amount of chemicals at the correct location and at the correct time. And while it represents a big step forward, it marks a step back as well.

"Precision ag is just a tool that allows us to manage smaller scales. If you think about how our grandfathers managed their farms, they were dealing on a smaller scale. Then they learned about economies of scale and things got bigger," notes Randy Taylor, an agricultural engineer at Oklahoma State University. "Precision ag allows us to go back and manage that smaller scale without sacrificing the mechanization that took place as we replaced horses and mules with agricultural equipment. In other words, even though I have a sprayer with a 120-foot boom, I don't necessarily have to manage to a scale 120 feet wide" if it's not in the crop's best interest.

In a best-case scenario, precision farming will reduce the amount of nitrogen that leaches into the groundwater and makes its way into the Chester River and its tributaries. There are several ways that can happen. First, and most obvious, a farmer with all this new information in real time may choose to reduce nitrogen inputs. Even with an increase in usage—and that's possible too—the nitrogen would be applied when the crop needs it the most. Applied that way, the plant absorbs the nitrogen before it can get into the groundwater.

Traditionally, many farmers in the watershed have used an 80-20 rule: applying 80 percent of their nitrogen at the start of the growing season and 20 percent during the "sidedressing," when the corn is knee- to waist-high. The problem is that if there are pounding rains at the start of a season, much of the nitrogen is lost. As McGrath pointed out in a recent webinar with Maryland farmers on nutrient management: "If the nitrogen is not yet applied, it can't be lost. Apply the nitrogen when it is required by the crop."

As part of the GreenSeeker project, Chester River Association conservation planner Paul Spies is trying to convince farmers to adopt a 20-80 rule. "We want to see them flip-flop the equation," he says. "Even though some soils hold nitrogen well, this is so much more efficient."

Going forward, McGrath would also like to see a study in the watershed that definitively measures the environmental benefit from a water quality perspective. None has been done yet.

Courtesy of GreenSeeker

The challenges ahead

Precision farming, just a dream 15 years ago, has come into its own. As agronomic consultant Harold Reetz, founder of the online Precision Agriculture Network, observes: "Precision agriculture is really becoming integrated into conventional farming. In 10 years, we will just call it farming."

But challenges lie ahead.

To be fully successful, there needs to be integration and compatibility between the technology and the equipment, Reetz says. Farming equipment needs to catch up. Moreover, the volume of data needs to be interpreted better so that farmers can make more informed decisions about their individual farms.

"We've only scratched the surface when it comes to data mining. Still, we've moved precision agriculture from a new idea to various technologies that really do much more than we ever dreamed about. Sure, we've made some wrong turns but we've

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Q&A | with the CHESTER RIVERKEEPER

Since joining Chester River Association as its chief advocate in February, Chester Riverkeeper David Foster has hit the ground running. Lobbyists, lawmakers, the region's riverkeepers and CRA's own stakeholders have all played roles in Foster's introduction to the organization.

"People have been very receptive and very open," he says. "At the same time, I am struck with the enormity of the task that lies ahead."

As the new Chester Riverkeeper, Foster brings a world of experience to CRA's advocacy program. For over 35 years, he worked on environmental programs to improve the quality of life in such far-flung destinations as India, Pakistan, Romania, Nigeria, Egypt and Thailand. He spent much of his career with the U.S. Environmental Protection Agency and the U.S. Agency for International Development. While with the EPA, Foster was widely recognized for leading contributions to the Emission Trading Program, later adopted into the Kyoto Protocols.

Here's what he's thinking as he considers his most recent challenge: improving the health of the Chester River.

CURRENTS: What are the top three issues facing CRA right now?

FOSTER: One, and I base this on my environmental experience elsewhere, is trust. The creation of trust among CRA's stakeholders is definitely one of my top priorities. A second issue is sustainability. Take, for example, our switchgrass program. You've got to be able to provide economic markets to make it sustainable. That leads into the third topic and this has to do with the science behind all of it. Our programs have to be supported by the strongest analysis possible, particularly in times of tightening budgets. Are we getting the best possible nutrient reduction for our invested dollar? It's critical, too, to look at lessons learned from other watersheds: How have they achieved the best results? How have they made their programs as sustainable as possible? There are a number of analytical techniques out there and I'd like to bone up on those. One example has to do with tools now available through environmental mapping. Basically, they help you identify areas that can produce the best results. In agriculture, it's better nutrient management. In urban areas, it's better stormwater control, and in rural areas, it's better septic systems.

Looking through CRA's lens, what were the highlights of the 2011 General Assembly in terms of winners and losers?

The tip-off is the way in which many of the environmental groups have summarized it. Essentially, they've said: "The good news is that we didn't slide backwards too far." The session started off with a bang and the governor came out with a host of green programs like wind power and septic improvements. Both of those failed. One of the victories is the better regulation of lawn and turf grass fertilizer. I think it's huge. The legislation eliminates phosphorous in standard lawn fertilizer and reduces nitrogen, both of which contribute to the pollution of the Chesapeake Bay and its tributaries. It's not as big an issue on the Eastern Shore as it is on the Western Shore because we don't have as many lawns or even golf courses. But it's very important and it's been overlooked for far too long. There is a tendency on all our parts to believe that if a little bit of fertilizer is good, more is better. We compete for the greenest lawn. And fertilizer companies have been really complicit in this, encouraging us to fertilize throughout the year. And it's not just about the amount of phosphorous and nitrogen in the fertilizer. We also want to encourage people to use a slow release nitrogen rather than rapid release, and encourage them to apply it in fall, when it is most important for grasses in this region rather than the spring, and to use the minimum amount. I went to a "bay-friendly" lawn and garden program recently and frankly I was a little disappointed. They did a good job but failed to draw the connection between nitrogen runoff and water quality. We really have to drive that point home. In fact, there's some evidence in terms of the overall Chesapeake Bay watershed that fertilizer on lawns and golf courses is now exceeding that on agriculture. That's an amazing statistic.

"I'd like to see more active involvement by watermen in CRA. If you look at successful programs elsewhere, whether it's Puget Sound on the West Coast or the Hudson River in the east, successful programs have actively involved watermen as well as vacationers, farmers and community people."

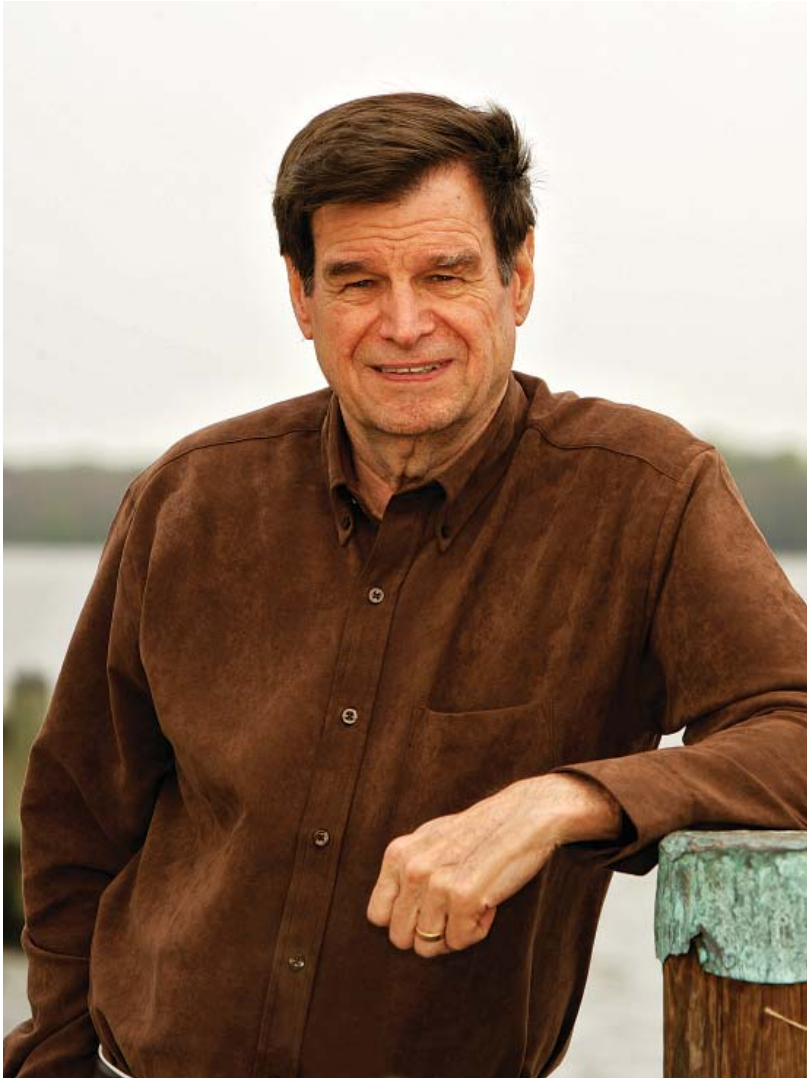
What about CRA's legislative priority going in: a bill that would have required all new construction statewide to have nitrogen

removal technology on septic systems?

It didn't make it. It's gone to summer study and it will definitely come back up next year. Unfortunately, it's a creature of the economic climate. When the construction industry is desperately trying to get back on course and this was painted as anti-economic and anti-development, it really didn't stand much of a chance.

What's the status of the switchgrass program?

As you know, (CRA conservation planners) Paul Spies and Virgil Turner are the lead on that. I think we're making good progress. We will be planting an additional 200 acres in the Chester River watershed in June, giving us a total of around 500 acres. Other watershed organizations in the region are looking to us as a role model on this. The real key is finding a market for the switchgrass and we've made headway there. I'm not ready to say mission accomplished but we have identified intermediate and long-term markets. Long-term, we think of switchgrass as an alternative fuel that could be burned with slight modification in some boilers, particularly if the switchgrass is pelletized. There's a tiny intermediate market due to a few people who are buying it to cover duck blinds. There's a larger intermediate market up in Pennsylvania where a mushroom grower is using our switchgrass for compost. So there is an end user for this. Our hope is to soon have a pelletizing operation in the area that should open its use as fuel. We see fuel as the holy grail of switchgrass and we hope that within a year, we'll be pelletizing.



David Foster

What is the takeaway from the new Chester River Report Card?

It's not much different than it was last year. If you're looking for rainbows, the good news is the creeks in the Upper Chester are now slightly better in terms of water quality, moving them from a C-plus to a B-minus. One of the contributors is the planting of cover crops, which creates less runoff so that you're reducing the amount of phosphorous and nitrogen in our waterways. Kent County farmers had the highest participation rate in the state last year when it comes to cover crops. The fact that we are improving says we're doing something right there. But that result is offset by a bit of degradation downriver where there is more population and more tidal action off the bay. Our ag programs haven't been as strong there either.

The town of Chestertown recently approved a ban on some plastic bags. Will this have any impact on the health of the Chester River?

First, I'm sorry it had to be so controversial. I think there were sincere people on both sides. I'm obviously in favor of it. It's interesting that at a time the statewide bill failed in Annapolis, this one went forward. It shows leadership here by people who really value the environment. We can show our support for local merchants by carrying bags to the store. As far as the river is concerned, the impact overall is small. We don't see a lot of bags in the Chester, but we see some. One statistic I read says that we use a plastic bag for 12 minutes but that they last 25 years. The ones that do blow out or are dumped nearby do have an impact. It's a small but important step for the river and CRA supported it.

Any new initiatives going forward?

I'd like to see more active involvement by watermen in CRA. If you look at successful programs elsewhere, whether it's Puget Sound on the West Coast or the Hudson River in the east, successful programs have actively involved watermen as well as vacationers, farmers and community people. CRA has done a great job working with farmers. I hope some of the other river organizations will take a lead from our example. But we need to do more with watermen and I'm working on that now. We need to get everyone involved.

The River Poems

When she writes a poem, Ellen Wise returns again and again to the Eastern Shore. As she puts it: "It's not all about water or islands but I find the poems are very much grounded in a sense of place—and that place is the Eastern Shore." Wise, a development director at the University of Delaware, took first prize in the second annual Pat Nielsen Commemorative Poetry Night last March. Sponsored by Chester River Association, the contest features poems that reflect some aspect of the Chester River watershed. It was judged by poet Jehanne Dubrow, an assistant professor of English at Washington College. The contest honors the late Pat Herold Nielsen, a poet who was a founding member of CRA.

Dusk on the Marshyhope

Last tincture of pink infuses the Marshyhope;

a trillion bugs chant lamentations to the fading day.

The current snakes away as slow as crabbers' talk

of plumb-stem bows and counter sterns, dead-rise destinations.

Ask an old man how his scow's been holding up, he might say,

She's still leaking, could use right smart of caulk,

but her engine's still a honey, and crabs is sweet this season.

Stink of salt marsh punctuates the low tide's loss.

A great blue, bowed among the mallows, shrugs;

her prehistoric squawk backwashes, bank to muddy bank.

Legs splayed, she casts her awkward weight against the dark

as though to wedge a hatch from sliding shut.

Caught, between apricot dusk and its sly, inverted face

A brackish swamp, she doesn't so much fly—

(broad, uneven wing-beats echo down the shallows)

—as kedge herself toward lightness.

Ellen Wise
First Prize

Jaybird Suite for Eastern Shore

fields damp with dripping dew
glistening golden corn
jaybird corn

turning tide washes salt upriver
sea-salt-crusted crab
sweet grass monster

bare feet in marshy miry mud
gathering garden's fruit
morning tomato

sun-ripened world

Caroline Knuth
Honorable Mention

Riding My Bike on Water Street, 7:37 AM

Every moment is a fragment that magnifies the one before. I know this because the morning I left your house for the first time, I saw the sun illustrate its knowledge of alchemy on the river's surface, the marvelous fog exacting its tufts as slow, unthinkable flames. I told you this, that everything from water, fog, and ferns, to feathers, bark, frost and heads of romanesco, encrusts the mind in some wicked amplification of its smaller parts, reduced-size copies of the whole. We talked of the future and I noticed fear, that old recursive algorithm, measure your face in the fractured light of the party. No reality in telling you that life is too irregular to be described by perfect shapes, because in describing it to each other, something incredibly more real is lost, and every following thought, louder than its predecessor, iterates what was sacrificed. And now, the day blinking, all things seem to stretch and yawn as a fraction of the world forgets its dreams. So giving and unforgiving, you and me and every we before us, the broken self-similarity of closed buds responding to the morning light, becoming something larger than themselves.

Douglas Carter
Honorable Mention

Paintings by Marcy Dunn Ramsey

Chester River Association wishes to recognize those River Guardians who have supported our work with donations of $1,000 or more each year. Our thanks go to:

Andrew and Marci Aerenson
Nancy and David Balliet
Michael Batza – Stagwell Farm
Thad and Renee Bench
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Van Dyke Family Foundation
Kirk and Laura Wade
Gilbert Watson and Ellen Uzelac
Dr. and Mrs. Clifton F. West
Peter and Susie Wilmerding
Chris and Jim Wright
Anonymous (5)

Life on the Chester

with MEREDITH DAVIES HADAWAY

By Ellen Uzelac

It all started with a 13-foot aluminum runabout with a 35-horsepower motor called No Boys Allowed.

"That's when my life began," says poet Meredith Davies Hadaway. "It really coincided with getting out on the water. It was empowering. It was revelatory. I began to write poems. It was a huge imaginative surge for me."

Hadaway has contributed to many poetry journals and written two critically acclaimed collections of poetry since she first took No Boys Allowed out in 1988. Then, as now, the Chester River figures prominently in much of her work.

In the poem *Pumping the Bilge,* she describes "the deep gurgle, like the river clearing its throat." In *Rupture*, she asks: "How much farther, we wonder, in our lifetime, will these two shorelines drift apart?" And in *Why the River*, which began as a prayer, Hadaway affirms "because it is a body / because it bears our weight."

Poet Peter Campion, writing about Hadaway's new book, "The River Is A Reason," notes: "Like the river that runs through the heart of it, the whole collection gathers itself into a single, sinuous body. American poetry is richer for this river."

> *"How could I possibly have lived here all this time and never found the river other than looking at it from the land, which is really different?"*

Hadaway, vice president of college relations and marketing at Washington College, lives on the Chester. She reads poetry every morning in her home office loft to "feed her head" and to look for "prompts" in the poems of others. Her poem *Interval*, about her father teaching her to play piano, was inspired by the very formal skeletal structure of a poem about a rescued dog. "It forces you to do things in a completely different way than you would otherwise do it," she says. "Why? Because it takes you someplace fresh."

Emotional power

Every Hadaway poem starts in a blue spiral notebook. It's where the emotional power resides—on the written page. Then she moves to the computer, an important step in creating the poem's visual voice. Line breaks provide a beat, a rhythm. And titles, hugely important, provide critical information or a way into a poem. "Music and poetry are first cousins," Hadaway says, "The power of poetry is how it looks on the page."

When she was little, Hadaway's mother would read aloud "The Highwayman" and other narrative ballads that sparked Hadaway's imagination. Her father, a naval aviator who in 1946 broke the world's then non-stop flight record, taught her piano at age three. Hadaway, who today plays piano, harp and concertina, says her literary and musical traditions intersect nicely in poetry.

"The River Is A Reason" is dedicated to her late father, Thomas Daniel Davies, who lived at the corners of her pages as she wrote. In *My Father Brings Jacques Cousteau Home* for Dinner, Hadaway recalls the real visit. In *Refraction*: "He tried to tell me about lights and navigation, though I never understood *red right returning—* / because for it to work, you have to know if you're coming or going." And in *Doubts About My Father*, she writes, "I knew he was the real thing–a god without a heaven, only a house, gathering shade and shadow, each room reverberating like the soundboard of an old piano."

Emerging themes

"I constantly write without really worrying about where it's taking me," Hadaway says. "Eventually, certain themes seem to just emerge on their own. In this particular book, clearly it's about the passage of time, water and navigation. They seem to keep finding each other in my work. I can't contemplate anything to do with water, navigation or celestial events without thinking about my father. All these things he was intimately involved with in life, and he instilled an awareness and appreciation of them in mine."

Hadaway, who tries to write a poem each week, came to Chestertown for a weekend in 1976 and never left. She packed in a job at the National Archives in Washington, D.C. and worked here as a social services employee, substitute teacher, sign painter and production and marketing manager for a maritime publisher. She joined Washington College as a graphics designer in 1983.

Meredith Davies Hadaway on her dock on the Chester River.

In 1988, the same year she bought No Boys Allowed, Hadaway purchased a small house on the river near the Chester River Bridge. She'd spend hours at a time on the water wondering: "How could I possibly have lived here all this time and never found the river other than looking at it from the land, which is really different?" By trial and error, she learned to navigate the Chester.

"I did everything," she says. "I picked crab pots up in my motor. I poured Coke on my battery when it went dead. Who knew until you get stuck somewhere and it doesn't start that Coke works? I learned all about the tides. To this day, I always have an awareness of the tides."

Hadaway also met her husband Cawood on the river.

"It was all about a mutual love of the river. The whole journey I took felt to me like a natural extension of the water. It was part of our courtship, our married life together, part of his illness." Cawood Hadaway, an artist, teacher and outdoorsman, died of cancer in 2000. "Fishing Secrets of the Dead," Hadaway's debut collection, recounts their time together—and apart. Here is one of those poems:

NIGHT LIGHT

Now that you are gone
I leave the bathroom light on

to make some difference
between darkness

and darkness.

The requirements of this poet's work: solitude, slowness and silence.

"I think an inevitable consequence of grief in your life is an awareness you are missing things. The only way to capture them is to commit yourself to slowing down time. To me, that is solitude, poetry and staring out the window," Hadaway says. "I'm a big fan of staring out the window."

At the moment, Hadaway is working on several collections of poems—some "witty," as she says, others about her forebear, a white man from Georgia who loved and had children with an African American woman born into slavery. "So many pieces of their story are missing," notes Hadaway. "Poetry helps you fill those gaps." The Maryland State Arts Council recently awarded Hadaway a grant that she will use to research the Georgia poems.

While her new work has drifted some from the Chester, this is a river that will always tug at her. "I love to go out on the river and just be. It's my favorite thing." While she now travels the river on a 21-foot cocktail cruiser, she will always owe a debt to that 13-foot runabout that helped her find her voice.

"There is something to this day about being alone on a boat that is a wonderful thing. I used to take the 13 to the east fork of Langford, and coming back I'd look for buoys and the little landmarks that would lead me home," Hadaway says. "It made me feel I could do or be anything."

Is Eastern Neck *`Invasives Island?'*

By John Lang

Defending the front line against invaders coming ashore at the mouth of the Chester River is a singular man with a silvered goatee, a bootlace that keeps coming untied and a distracted air that he blames on hay fever. His only weapon: a hand-held GPS mapping device.

On a mild morning in early spring he heads into tall piney woods north of Bogles Wharf, where he suddenly stops and points. "There's one," he says.

The alien is bent, about three feet above soggy ground. It has a maroon hue and long spindly arms, and when you get close, it gets prickly. The thing looks out of place here, but it's made itself very much at home.

"Wineberry," Ben Bennington calls it, just before an observer he's brought along is snagged in its tentacles. A minute later he points out another kind, this one looking like a fright wig of straw that's topping a cluster of laurel. It's named for the way it swallows native growth: mile-a-minute.

The Eastern Neck National Wildlife Refuge, where Bennington has worked as a volunteer for the past decade, is a place of rare beauty that is infested with exotic plant growth. Some 170 species from other areas have established free-living populations in the Chesapeake Bay watershed, according to the Chesapeake Bay Foundation. Where invaders thrive, natives don't so much.

What's being done about that locally holds promise for the rest of the region. Eastern Neck is showing that while the struggle may never be completely won, there can be, with determined effort, advances.

Until a couple of years ago the first thing visitors to the refuge saw was a vast encroachment by one pestiferous plant. Once over the little bridge to the 2,300-acre island, as far as eyes could see, Phragmites clogged shorelines in both directions. It's almost all gone today, the result of repeated burnings.

Wineberry and mile-a-minute are being pushed back, too, as well as other targeted species at the refuge: garlic mustard, Canada thistle, Johnsongrass, Japanese stiltgrass, princess tree and tree of heaven.

Plan of Attack

Eastern Neck's sustained fight against the aliens began in 2005 under wildlife biologist Rachel Cliche, who rounded up a dozen volunteers for training sessions on how to identify and map where exotics had taken root. The next step was to try to uproot them or spray with herbicides. Then the volunteers would go back every season to remap each stand and measure whether it had spread or shrunk. That let the botanists determine which technique worked best on which plants, what concentrations of herbicides to use, and how much, and the best time to apply them.

The plan has worked, if not quite as expected. As visitors to the refuge quickly learn, summers there are buggy, wet winters chill the marrow, the muck is deep and slow to let go of feet. Winds blasting out of the bay have knocked men flat—and thorns hurt.

Six years into the project, that volunteer platoon numbers one: Bennington, a 72-year-old British-born American who, one morning a week, October through March year after year and never mind the weather, is pushing through the briars and touching a stylus to GPS screen to mark the location of some patch of something that shouldn't be there.

Volunteer Ben Bennington uses GPS to map a wineberry stand at Eastern Neck.

He's the lone scout and, he says, "I just love it." He laughs when asked if he expects ever to see the invasives eradicated. "They wash in on the tides. They blow in on the wind. The birds bring their seeds. You can kill them for a time but they will come back."

Bennington will be uncomfortable reading this attention to himself, knowing he's a part-time cog in a collaborative fight against exotic plants. He is guided by Eastern Neck's wildlife refuge specialist Cindy Beemiller and U.S. Fish & Wildlife Service administrators out of Blackwater National

Wineberry.

Wildlife Refuge, notably biologists Matt Whitlock and Nate Carle.

Lessons learned at Eastern Neck are being shared throughout the Chesapeake marshlands natural wildlife complex and have been applied at Blackwater near Cambridge, Susquehanna National Wildlife Refuge at the top of the bay and at the Martin refuge on Smith Island. That takes professionals as well as volunteers at every site. The actual spraying of herbicides is done in warm season by interns from area colleges.

It's local folk, in fact, who keep America's refuges up and running. It's estimated that more than 50 percent of refuge operations nationwide are supported by volunteers. At Eastern Neck, where there are just three fulltime employees, that share is far higher.

Today, there are 38 volunteers who staff the gift shop and front desk and answer phones at the headquarters lodge. Local residents mow, weed, rake, haul trash, repair boardwalks, put up signs and help with bird counts.

Volunteers are `backbone'

"The volunteers are the backbone of Eastern Neck. They're keeping the doors open," says Blackwater's Nate Carle.

Carle is an invasive species specialist who points out that Eastern Neck's struggle against the aliens has implications for private and public lands throughout the Chesapeake watershed.

As he explains it, "Species from Asia or Europe may outcompete native plants, sometimes produce more seeds, sometimes grow faster in spring and get above native plants and grab the sunlight. The habitat becomes degraded."

Beemiller says she worries about the refuge turning into "Invasives Island."

So how is Eastern Neck doing in the makeover? Beemiller is cautious: "We're holding our own."

Then what, if anything, would improve the picture?

"More volunteers," she says, "to help us with hand pulling. If we find a small patch before it spreads, volunteers can do hand pulling. With invasives, you want to get to their roots. That helps, especially in the spring when the plants come out of the ground."

To join up, dial 410-639-7056. Ask for Beemiller or Colby Hawkinson, who coordinates the volunteers. The refuge is not asking for a big commitment.

"Without Ben Bennington we wouldn't have a map and we'd waste time looking for invasives. But it doesn't have to be someone as dedicated as Ben. He's here once a week and the time adds up. But someone could come one time, or maybe four times a year. And that," Beemiller says, "would help."

—John Lang is a freelance writer who lives in Chestertown.

Got Goat?

Invasive plants taking over your yard?

Get a goat.

That's advice from the University of Maryland extension service, which claims that goats are a fine option on sites that are difficult to maintain, like steep slopes and thick jungles of thorny vines.

"Goats are browsers by nature, similar to deer, and happily munch on many exotic and invasive plants without the hazard of herbicide or the labor of hand-pulling," says the university's report, "Invasive Species of Concern in Maryland." Among their favorite foods: multiflora rose, kudzu, Phragmites and Johnsongrass.

Of course, they may snack with goaty gusto on your tulips, too, and any laundry hanging on a clothesline. So, UMD warns, make sure your goats have access to plenty of their preferred foods so that they don't nosh on your Calvins.

To see goats in action, check out the goat-browsing project at Adkins Arboretum. Information is available at www.adkinsarboretum.org.

For a list of invasive species you really don't want on your property, click on www.nps.gov/plants/alien/bkgd.htm. The National Park Service reports there that invasive non-native organisms are "one of the greatest threats to the natural ecosystems of the U.S. and are destroying America's natural history and identity." According to the website, 4,000 exotic plant species and 500 exotic animals have established free-living populations nationwide.

The Chesapeake Bay Foundation notes that many species have been brought to this region accidentally, in ballast water or as hitchhikers on boat bottoms.

But, it points out, many others have been introduced by property owners who may be unaware of the consequences. A notable example: English ivy, sold as an ornamental plant and found abundantly throughout the watershed.

Noting that the weight of English ivy vines makes host trees more likely to fall during storms, CBF warns, "Never introduce English ivy to your landscape. Instead, try a native substitute like Virginia creeper."

—JL

Continued from page 5

gone much farther than I ever thought possible," he adds. "Who would have thought that you could use a cellphone or an iPad in a field and pull up data from the last 10 years of soybean yields?"

And it doesn't stop there. The 49-year-old Taylor, one of the nation's foremost experts on the topic, fully expects to see autonomous vehicles operating in fields in his lifetime. "We have all the pieces right now," he says. "It's just integrating them."

And at a technology incubator park in Indiana, technology developer Neil Mylet, a fifth-generation corn and soybean farmer, is creating agricultural apps for smartphones. Within 30 days of launching his website LoadOut Technologies last year, he had web hits from 65 countries.

CRA conservation planner Paul Spies, left, and biologist Josh McGrath check out GreenSeeker results.

"What mobile technology does is take away all the complexity that for so long has been built up in technology," says Mylet. "We're at a tipping point. You're going to see accelerated growth in the ag technology sector."

And beyond technology and equipment, there's culture.

Farmers are an independent lot who don't like to share data, according to Reetz, who is headquartered in Monticello, Ill. "If they have one trick better than their neighbor, they have a better chance at getting the next 40 acres that come up for rent," he adds. "There needs to be more collaboration."

To that end, McGrath's grant proposal to add 11

> *"It's like the first time someone bought a tractor and the guy next door is still driving a plow with a horse. It could change everything."*
>
> *—Josh McGrath*

GreenSeekers on Delmarva includes the establishment of peer groups that would be mentored by each GreenSeeker farmer. The results of the grant competition will be announced early this summer.

Locally, Chester River Association's Spies along with McGrath are serving as mentors to farmers Dave Hill and Bunk Miller, who a year ago launched the three-year pilot, funded by the 2010 Chesapeake Bay Trust Fund. Two other farmers in the watershed joined the program this spring, thanks to a grant from the Natural Resources Conservation Service.

In late March, Spies and McGrath met with Hill and Miller to discuss the results of their trial run. No one knew quite what to expect but research on small corn plots from UMD and Virginia Tech have found that GreenSeeker use resulted in a five percent increase in grain yield and a 21 percent reduction in nitrogen.

McGrath crunched the numbers.

The news was good.

Hill, on a 100-acre test plot, achieved a 30 percent reduction in fertilizer use. And this season, for the first time, he cut his upfront application in half. Instead, he'll apply it at sidedressing.

"It's showing us you don't need that extra nitrogen upfront," Hill says "We're trying to get it pinpointed down to what the crop needs. Going forward, this is going to be the standard."

Not surprisingly, Spies is happy.

"That flip flop, it's exactly what we were hoping for. When a farmer changes his practice, he's doing it for a reason," he said. "Once the data gets out about potential savings and potential crop improvement, more and more farmers will be interested. It's a lot to ask a farmer to purchase that kind of equipment on blind faith."

And Miller, on 500 acres, had a five percent reduction in nitrogen use. In this case, Miller didn't fertilize upfront—only at sidedressing. He also experienced some technological glitches early on.

Miller, with his brothers Charlie and Gary, aren't disappointed.

"Oh good gravy," Gary Miller said. "Five percent is a lot of money to us. That's $4.30 per acre that you're saving. And if there's an environmental benefit for the river, all the better."

Bunk Miller, meanwhile, plans to up the ante this year by using GreenSeeker to fertilize "all I can get done with it." Potentially, that amounts to 2,000 acres of corn.

"We've got to see what it can do and that means running it for three years," he adds. "I'm not a true believer yet."

—Ellen Uzelac is editor of CURRENTS and Chester **RIVERKEEPER**® Almanac

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Letter from the PRESIDENT

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the lost economic activity from a further degraded Bay. A 2004 study by the Chesapeake Bay Blue Ribbon Finance Panel estimated the value of the Bay at over $1 trillion with an annual economic impact, a Bay GDP, of $33 to $60 billion. TMDL implementation cost estimates for all sources of pollution, not just agriculture, are in the $2 to $3 billion a year range. Investing $3 billion annually to maintain and grow a $33 billion revenue stream is an outstanding return on investment.

Another objection is that EPA's science is flawed. Computer modeling of non-point source pollution is not a lab experiment. Over the decades, scientists have identified the cause and effect of our nutrient-generating activity on land. Interestingly, USDA recently released its own model of the Bay. Although significant differences exist between the data used in the two models, they both arrive at similar conclusions for nitrogen and phosphorus loading from agriculture. The EPA model estimates 45% of total nitrogen reaching the Bay is from agriculture while USDA puts it at 48%. Likewise, the EPA model estimates 44% of phosphorus comes from agriculture while USDA estimates it to be 37%. The numbers vary but the conclusion from both models is clear: Agriculture has made progress at reducing nutrient loading and needs to continue to improve, along with the other sources of water pollution, in order for the Chester and the Bay to return to the waterways they were in the 1950s.

We are fortunate in the Chester River watershed to have so many farmers who are accepting the message science is telling us by voluntarily implementing their own nutrient reduction and sediment retention practices. As the Chester's leading source of both, they control the outcome of whether the Chester will return to the river many of us remember and the young have yet to experience—or continue to die slowly. Politicians and society at large must continue to help farmers minimize their impact on water quality with conservation subsidies and incentives that do not simply reward higher yields but emphasize nutrient and sediment reduction. TMDLs are not the problem. They are our best hope.

Thank you for your continued support of CRA. Please suggest to others that they help work toward the goal of a restored Chester by becoming a member. It won't happen without effort from all of us who care.

Michael Moore
President, Chester River Association

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Why the River

because it is a body

because it rises in our sweat,
marries our breath to the cold

because it spills light back to us
and hoards our shadows

because it leaves when gravity insists
but always comes back

because it traps the clouds so we can sail
across both heaven and earth

because it carries our tears, swells
with our salt

because it is a body

because it bears our weight

Meredith Davies Hadaway