With funding from the Chesapeake Bay Trust and in consultation with the West/Rhode Riverkeeper, OpinionWorks has conducted an audience evaluation of tributary report cards, conducted through focus groups. This report presents the findings and recommendations that arise from this research. We hope it will serve as a best practices guide for creating report cards that not only report on water quality, but also engage the public in the work of protecting the Bay and its tributaries.

Project Overview

Objectives

Tributary report cards are meant to be data-driven assessments of the condition of the waters. At their core, these are scientific documents, produced by water quality professionals and volunteer experts. But beyond the community of professionals and experts, the general public wants to be kept informed on the health of the Bay and their local tributary, and they want to be engaged to do something to help. Annual tributary report cards provide an opportunity to engage the well-intentioned public and to foster good stewardship behaviors. As the key funder of Bay tributary report cards, the Chesapeake Bay Trust has a critical stake in ensuring that report cards are as effective as possible in accomplishing that goal.

This research seeks behavior change on two levels:

1. To encourage water organizations to produce a different kind of a report card – one that resonates with the public and draws in new constituents.
2. Through this improved report card, to engage more residents around the Bay in positive, practical stewardship actions.

Through prior research in the Spring of 2011, OpinionWorks tested the effectiveness of one report card – the West and Rhode Rivers Report Card – with a survey of the Riverkeeper's own constituents and a selection of community leaders. Building on that initial work, this much broader audience research was conducted through focus groups, and designed to evaluate a variety of report cards in suburban, urban, and rural settings, in partnership with local water protection organizations. This report presents the results of that research and identifies best practices for writing and designing a report card that will serve as an effective outreach tool in different settings around the Bay.

Methodology

Focus groups are roundtable discussions among six to ten respondents, and facilitated by a professional moderator. This project consisted of six focus group discussions, each lasting about 90 minutes, following a pre-determined topical outline. The moderator encouraged participants to comment in-depth on those topics, and to bring up related discussion points of interest and concern to them, as well. This methodology is extremely well-suited to understanding the impressions and the depth of feeling created by a communications tool like a tributary report card.

On a very practical level, these focus groups provided a host of good information about content and layout of report cards, right down to best use of images and words. Participants identified what they found most motivating, or felt to be stumbling blocks. At the same time, the focus group technique uncovered the more intangible and important answers *why* respondents would be motivated or put off by a particular report card – which is the essential element needed to

project these research findings from our focus group participants to the more general audience of Chesapeake Bay watershed residents.

Two focus groups were held in each of three locations, one among members and supporters of a local water protection organization, and a second among members of the general public who are not connected to a water group but have a basic affinity for water protection as a personal priority. The groups were held as follows:

- January 10, Annapolis, MD (Local sponsor: West/Rhode Riverkeeper)
- January 12, Chestertown, MD (Chester River Association)
- January 14, Baltimore, MD (Blue Water Baltimore)

Forty-eight people participated in the six focus groups, which were facilitated by our moderator, Kathy Flament. As an aid to the discussion, seven specific tributary report cards were tested in whole or in part. In addition to the West and Rhode Rivers Report Card, a variety of others were tested and will be referred to throughout this report.

Abstract of Findings

This report card evaluation shows that readers want a clear visual representation of the water quality grades or scores so they can see them quickly. Moreover, if the data will allow it, they want to see the *trends* in the indicators.

Once they have learned the water quality grades, readers quickly want to move beyond them to know what they can do personally to help improve the indicators. The public is generally well-intentioned and wants to do its part, but often people simply do not know *what* to do. They are hoping to learn about actions that an average person can take without spending much money, along with the more dramatic remedies like conservation landscaping. In the report card, each recommended action should be linked directly to the indicator it will impact, both visually and in the discussion.

Readers want the report card to be easily understandable, without technical terms and scientific jargon. Because people are busy and bombarded with information on many topics, they want the report card well-edited and summarized.

Visually, readers want the report cards to have a clean, uncluttered appearance. Photos should be large, be self-explanatory and include people where possible, and be of good quality and not pixelated. Fonts should be as large as possible. Maps are interesting but should not be overused, particularly in more urbanized areas. Complex graphs and tables are generally not helpful to most readers.

Today, report cards can be kept alive throughout the year and pushed out to constituents through social media. As a vision for the future, readers foresee interactive report cards hosted online – with a brief topline report card hosted online and links to deeper content for readers that want that. With standardization, online report cards could tie together to compare tributary to tributary, which would greatly interest the public. Through social media, a mostly younger audience can be engaged with the report card indicator and moved to action.

Our detailed report follows.

Detailed Observations

Following is a detailed discussion of the findings of this research, organized in three sections:

A. Report card content that readers find most engaging and helpful

B. Layout and design features that make the audience likely to read the publication

C. Online and social media opportunities for the report card.

To facilitate the discussion, we tested in whole or in part seven specific report cards from around Maryland's Chesapeake Bay watershed, selected because they provided an array of formats and techniques in presenting the data. Throughout this summary, specific examples from these report cards are lifted up and discussed when that is helpful to illustrate a point. Verbatim quotes from focus group respondents are included when they are illustrative and represent a significant or widely-held viewpoint.

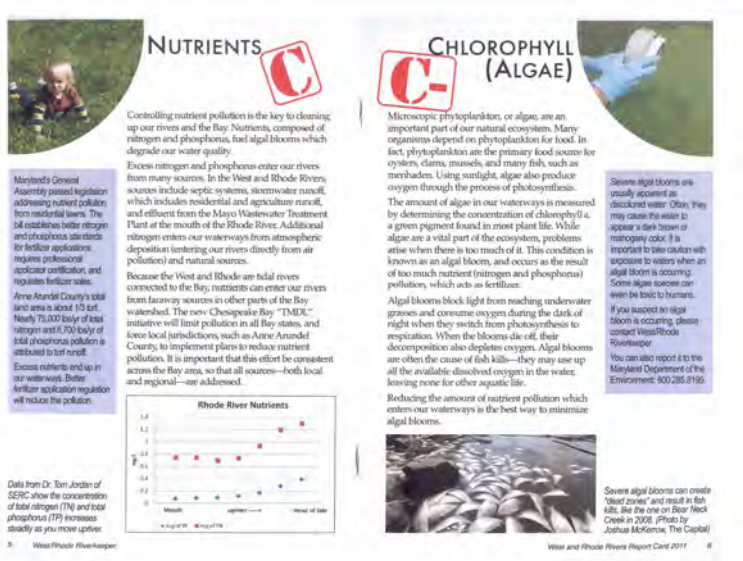
REPORT CARD CONTENT

1. There is great interest on the part of the public in seeing a clear grade for their tributary, and a trendline on water quality.

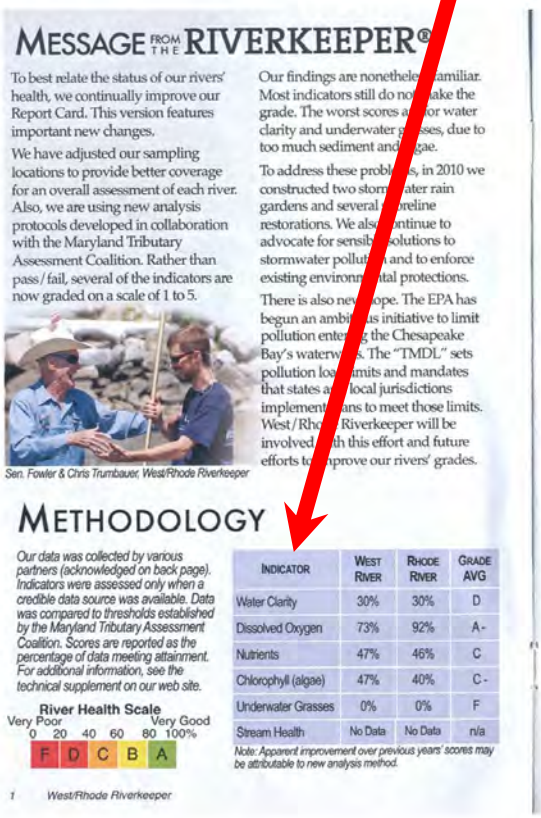
Marylanders are generally aware that the condition of the waters is not good. Whether in the Bay proper or in their local tributary, citizens have been conditioned to expect that the waters score poorly.

This is not to say that the grades presented in the report cards are unimportant. On the contrary, the public is acutely interested in the tributary grades, and want them presented clearly and distinctly in the report cards. More importantly, no matter what the baseline is, the public wants to know if there is a *trend* in water quality. They look for and welcome any information that shows a pattern or change from year to year.

Within the report card document, being able to see the letter grade clearly associated with each indicator is important to readers. Several report cards did a good job of showing their grades prominently, including the West and Rhode Rivers Report Card, where the letter grades stood out and grabbed readers' attention:



But focus group participants wanted to revise the way the West and Rhode Rivers Report Card presented its *overview* of the tributary grades. As seen here, a summary table found on the inside front cover was too small, according to participants. Due to its importance, readers wanted the table presented more prominently, and larger, so they could quickly and easily find the main takeaways.



MESSAGE FROM THE RIVERKEEPER®

To best relate the status of our rivers' health, we continually improve our Report Card. This version features important new changes.

We have adjusted our sampling locations to provide better coverage for an overall assessment of each river. Also, we are using new analysis protocols developed in collaboration with the Maryland Tributary Assessment Coalition. Rather than pass/fail, several of the indicators are now graded on a scale of 1 to 5.

Our findings are nonetheless familiar. Most indicators still do not make the grade. The worst scores are for water clarity and underwater grasses, due to too much sediment and algae.

To address these problems, in 2010 we constructed two stormwater rain gardens and several shoreline restorations. We also continue to advocate for sensible solutions to stormwater pollution and to enforce existing environmental protections.

There is also new hope. The EPA has begun an ambitious initiative to limit pollution entering the Chesapeake Bay's waterways. The "TMDL" sets pollution load limits and mandates that states and local jurisdictions implement plans to meet those limits. West/Rhode Riverkeeper will be involved with this effort and future efforts to improve our rivers' grades.

Sen. Fowler & Chris Trumbauer, West/Rhode Riverkeeper

METHODOLOGY

Our data was collected by various partners (acknowledged on back page). Indicators were assessed only when a credible data source was available. Data was compared to thresholds established by the Maryland Tributary Assessment Coalition. Scores are reported as the percentage of data meeting attainment. For additional information, see the technical supplement on our web site.

River Health Scale

Very Poor 0 20 40 60 80 100% Very Good

F D C B A

INDICATOR	WEST RIVER	RHODE RIVER	GRADE AVG
Water Clarity	30%	30%	D
Dissolved Oxygen	73%	92%	A-
Nutrients	47%	46%	C
Chlorophyll (algae)	47%	40%	C-
Underwater Grasses	0%	0%	F
Stream Health	No Data	No Data	n/a

Note: Apparent improvement over previous years' scores may be attributable to new analysis method.

1 West/Rhode Riverkeeper

SAMPLING LOCATIONS WITHIN OUR WATERSHED

West/Rhode Riverkeeper Monitoring Sites
SERC Tidal Stations
DNR Tidal Stations

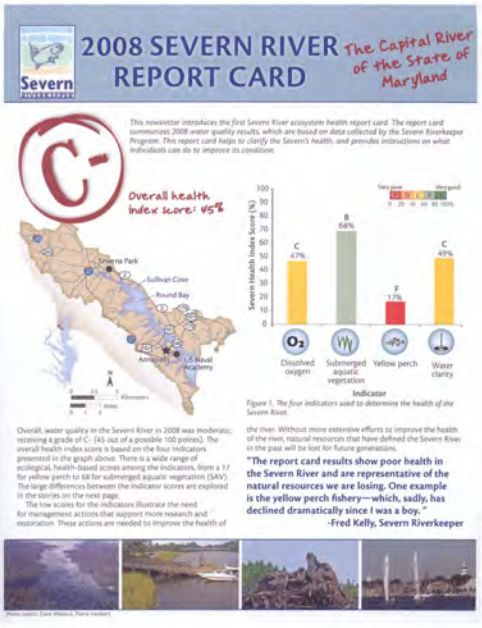
Station locations were adjusted prior to the 2010 sampling season to provide for a better overall assessment of the rivers.

NOTE: Space limitations have required the use of acronyms throughout this document. These valuable contributors are referred to often:
- SERC (Smithsonian Environmental Research Center)
- DNR (Maryland Department of Natural Resources)

West and Rhode Rivers Report Card 2011 2

Notable was the 2008 Severn River Report Card, which did a particularly good job in readers' view of quickly and clearly identifying the aggregate grade for the river.

This overview also identifies the indicators that were used to determine the aggregate health of the Severn, and the score for each indicator.



2008 SEVERN RIVER REPORT CARD

The Capital River of the State of Maryland

Severn Riverkeeper

C-

Overall health index score: 45%

Figure 1. The four indicators used to determine the health of the Severn River.

Overall, water quality in the Severn River in 2008 was moderate; receiving a grade of C- (45 out of a possible 100 points). The overall health index score is based on the four indicators presented in the graph above. There is a wide range of ecological, health-based scores among the indicators, from a 17 for yellow perch to 68 for submerged aquatic vegetation (SAV). The large differences between the indicator scores are explored in the stories on the next page.

The low scores for the indicators illustrate the need for management actions that support more research and restoration. These actions are needed to improve the health of the river. Without more extensive efforts to improve the health of the river, natural resources that have defined the Severn River in the past will be lost for future generations.

"The report card results show poor health in the Severn River and are representative of the natural resources we are losing. One example is the yellow perch fishery—which, sadly, has declined dramatically since I was a boy."

-Fred Kelly, Severn Riverkeeper

On its first inside spread, the South River's 2011 Scorecard did a good job providing both a five-year trendline for each indicator in the table to the left, and an overview of the current grades and their trends in the table to the right. Readers appreciated this quick take on the status of the river.

About the Scorecard

The South River Federation is pleased to present the fifth ***South River Scorecard***, providing an assessment of the state of health of the South River, Maryland. This assessment has six water quality indicators [(1) water clarity, (2) dissolved oxygen, (3) total nitrogen, (4) total phosphorus, (5) chlorophyll *a*, and (6) underwater grasses], a human health indicator (bacteria), an enforcement indicator, and two descriptive indicators which are not scored. Weekly, Diana Muller the South RIVERKEEPER® and her crew of volunteers, performed water quality monitoring at 21 stations in the tidal portion of the South River during the water quality monitoring season. This includes two additional main stem stations added in 2010. The water quality scores are calculated statistically for each numeric indicator, in accordance to the Chesapeake Bay Program Criteria. References used were: *"Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and Its Tidal Tributaries, 2003-2008"* and the Code of Maryland Regulations (COMAR). The scores are based on the percentage passing the criteria. For example, if 10% passed, the score would be a 1 out of 10, and if 100% passed the criteria the score would be 10. The table below shows the water quality trend since 2007.

Water Quality and Human Health Indicators (0-10)

	2007	2008	2009	2010	2011
Water Clarity	2	2	1	1	2
Dissolved Oxygen	6	5	6	2	6
Nutrients	7	—	2		
Total Nitrogen	—	—	—	9	7
Total Phosphorus	—	—	—	2	1
Chlorophyll *a* – Spring	—	2	0	0	2
Chlorophyll *a* – Summer	—	—	—	—	0
Bacteria	3	2	7	8	7
Underwater Grasses	1	1	0	0	0

Scorecard Results 2011

SUMMARY OF RESULTS

WATER QUALITY INDICATORS	SCORE	CHANGE
Water Clarity	2	▲
Dissolved Oxygen	6	▲
Total Nitrogen	7	▼
Total Phosphorus	1	▼
Chlorophyll *a*, Spring	2	▲
Chlorophyll *a*, Summer	0	NO CHANGE
Underwater Grasses	0	NO CHANGE

HUMAN HEALTH	SCORE	CHANGE
Bacteria	7	▼

ENFORCEMENT INDICATORS	SCORE	CHANGE
Anne Arundel County	8	NO CHANGE
State of Maryland	5	▲

DESCRIPTIVE INDICATORS

Septics, Community Engagement

As a minor concern, though, focus group participants were uncertain how to interpret the numerical grading scale. In particular, people wondered if a high number for an undesirable indicator like nitrogen was good or bad. Similarly, if the trend in that indicator was downward, they wondered if that was a positive or a negative trend from the standpoint of water health. If this numerical scale is used, more needs to be done to make it immediately and correctly understandable to the reader.

2. People want to know how they as average citizens can get involved in improving the health of their local waters.

Once they have seen and absorbed the grades, the reaction of most readers is immediately: "What can I do to help?" They want the report card to identify what they can do – and what they can advocate that their neighbors do – to improve these scores. As one respondent said quite simply about a report card:

"I like how it's not all doom and gloom. It says right here on the back, there are things that you can do. There's bad news, but the good news is that there are things that we can do to make it better."

In a similar vein, people want to know that there is a plan to get to the goal of cleaner waters. Rather than just a report on water conditions, they want to know what the experts are saying could be done to improve the situation over the long run. Then they can decide how they want to plug in to that effort. None of the report cards we tested provided a good sense of an overall strategy.

"I was really hoping to see sort of a game plan or goals. Here is the grade, here are the problems and here is what we are going to do this year, or in the next five years, or right now, this is what needs to be done. Just concrete, say, do this, and things will be better. This is what we want to see happen and maybe I could take part in it if I knew what the goals of the organization were."

These two respondents played off each other in reacting to a report card that they thought was not engaging enough:

"Yeah, we want to read something that says that you can make a difference..."

"…Not just what's wrong – you tell me it's really bad, give me all the information, but you don't tell me what I can do. So don't just give me the bad news, but also give me what could be done."

The public wants to know what they can do to help, but we know from past work that providing a *laundry list* of possible actions can be overwhelming, as people are not sure which action to choose. With too much information, they are stymied by inaction. But presenting and explaining a short list of recommended actions – perhaps a very short list – is more likely to generate participation.

Further, respondents suggested that each recommended action should be linked to a specific water quality indicator, making the list digestible and outcomes-oriented. On their own, readers use the grades as a cue to tell them where action is most needed:

"Well, actually the letters are motivational to me, because it sends me a signal. Either I want to focus on water clarity or I'm going to focus on underwater grasses because they're a D and an F. I'm not going to focus on dissolved oxygen, because it's an A-minus."

Though its recommendations should be limited in number, a report card should offer a *variety* of possible actions – not just costly landscaping, or not just legislative advocacy, for example.

"The one thing that I think is really lacking is that their 'homework' part is purely legislative. It doesn't tell me what I can do personally."

As a general principle, several respondents said that the recommended actions should include easy, low-cost steps to get them engaged initially – "the five-dollar action that the average person can take." The report card cannot just advocate more dramatic actions like installing living shoreline or conservation landscaping.

> *"(I'd like to hear) how I can help. What little things I can do to help them. Not by giving them money, because I don't have any of that. But ways that I can help in other ways. Ways that I can maybe get my kids involved. Ways I can get the school involved."*

> *"I like that it shows a lot of everyday people out there cleaning up the water and not, like Sarah said, people from the government in hazmat suits. So it's like everybody can do something."*

Several report cards offered some version of a "homework" or "solutions" section. Two stood out:

- The Magothy River Index report card's "Action, Result" table resonated with respondents because it was a focused presentation of possible actions. In table format, it was easy to identify the actions, and quickly look down the list.

  If there was criticism of the Magothy presentation, many hoped the table could be made more graphically interesting. Others hoped to see one or two low-cost, simple actions included in a table like this.

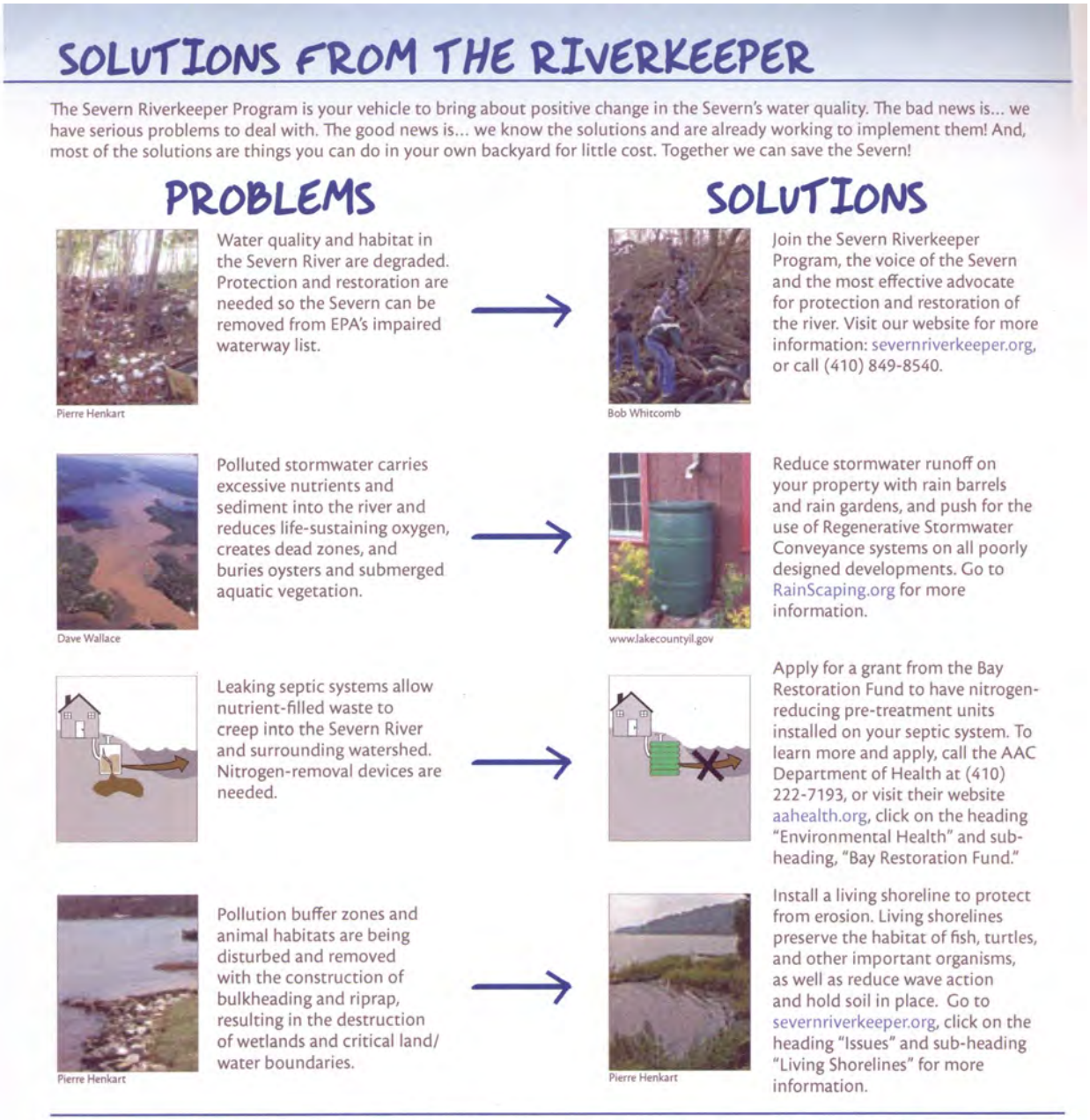
Our homework

Action	Result
Join the Magothy River Association: see *www.magothyriver.org* and click "Join Us"	Contact President Paul Spadaro at 410-647-8772 or *president@magothyriver.org*.
Volunteer to help with MRA oyster restoration projects, and with monitoring of both oyster and SAV habitats (via diving and in canoes/kayaks respectively), and growing SAV to plant in upper Mill Creek.	We can improve our vital habitats and track them over time. Contact Dick Carey to help with oysters and/or diving at *magothyriverdiver@gmail.com*, or Peter Bergstrom for SAV surveys or planting at *pwbergstrom@gmail.com*.
Plant more native trees. Cut trees down *only* when dead and/or dangerous.	Trees absorb nitrogen, reduce air pollution, provide food and habitat to animals, shade houses, etc.
Install rain gardens and stormwater retrofits in your yard and neighborhood.	Reduce the quantity of stormwater runoff, and improve its quality , as was done in Manhattan Beach.
Replace some of your lawn with native flowers and shrubs; fertilize it only in the fall (if needed). See *http://www.dnr.state.md.us/criticalarea/pdfs/BackyardMakeover.pdf*	Reduce your use of fertilizer, lawn chemicals, water, and gas for mowing; increase habitat and food for animals, reduce harmful effects of runoff.
If you have a septic system, maintain it on schedule. Consider upgrading to a nitrogen removing system (priority is failing septic systems in the Critical Area).	Reduce nitrogen runoff into ground water and nearby streams. To learn how to apply for upgrades see: *http://www.aahealth.org/a2z.asp?id=208*
Reduce energy use and air pollution. Buy energy efficient cars and appliances and electric-powered yard tools, and use them to minimize energy use.	Reduces greenhouse gas and nitrogen emissions; slows global climate change; saves you money.

- The 2008 Severn River Report Card's "Solutions from the Riverkeeper," was extremely well-received. Covering a full page, this presentation linked the problems with a solution that would address each one directly.

  A key aspect of what appeals about the Severn Riverkeeper's approach is its clear sense of cause and effect: if people take a specific action, they can achieve a specific outcome. The graphical presentation even used arrows to make the linkages clear, and the report card provided helpful referrals to information and experts.

  The use of photos and graphics was helpful, as well, to illustrate the issues being discussed.



SOLUTIONS FROM THE RIVERKEEPER

The Severn Riverkeeper Program is your vehicle to bring about positive change in the Severn's water quality. The bad news is... we have serious problems to deal with. The good news is... we know the solutions and are already working to implement them! And, most of the solutions are things you can do in your own backyard for little cost. Together we can save the Severn!

PROBLEMS		SOLUTIONS
Pierre Henkart	Water quality and habitat in the Severn River are degraded. Protection and restoration are needed so the Severn can be removed from EPA's impaired waterway list.	Bob Whitcomb — Join the Severn Riverkeeper Program, the voice of the Severn and the most effective advocate for protection and restoration of the river. Visit our website for more information: severnriverkeeper.org, or call (410) 849-8540.
Dave Wallace	Polluted stormwater carries excessive nutrients and sediment into the river and reduces life-sustaining oxygen, creates dead zones, and buries oysters and submerged aquatic vegetation.	www.lakecountyil.gov — Reduce stormwater runoff on your property with rain barrels and rain gardens, and push for the use of Regenerative Stormwater Conveyance systems on all poorly designed developments. Go to RainScaping.org for more information.
	Leaking septic systems allow nutrient-filled waste to creep into the Severn River and surrounding watershed. Nitrogen-removal devices are needed.	— Apply for a grant from the Bay Restoration Fund to have nitrogen-reducing pre-treatment units installed on your septic system. To learn more and apply, call the AAC Department of Health at (410) 222-7193, or visit their website aahealth.org, click on the heading "Environmental Health" and sub-heading, "Bay Restoration Fund."
Pierre Henkart	Pollution buffer zones and animal habitats are being disturbed and removed with the construction of bulkheading and riprap, resulting in the destruction of wetlands and critical land/ water boundaries.	Pierre Henkart — Install a living shoreline to protect from erosion. Living shorelines preserve the habitat of fish, turtles, and other important organisms, as well as reduce wave action and hold soil in place. Go to severnriverkeeper.org, click on the heading "Issues" and sub-heading "Living Shorelines" for more information.

3. Members of water protection groups want the report card to be a tool *they* can use when talking with their neighbors and others in the community.

Among the watershed group members we interviewed, there was a strong sense that they already know the key facts about water quality but want a document that will help them evangelize with others. Here is a constituent describing how a report card can serve multiple audiences, and another underlining the point:

"The less informed, if they start to get informed, and start to get engaged, and start to pay attention, that's a huge success. And then the people that are already informed – they need to stay encouraged, that no, I haven't been wasting my life, beating my head against a wall, and throwing my donations away…"

"We are not the problem. The problem is…we've got to inform everybody else."

Naturally, even knowledgeable people who are members of water protection groups have more to learn, and the report card can subtly provide information even to those who feel convinced they already know it all. In fact, the new information these member/advocates gather from the report card is likely to be what interests them the most in the moment, and what they will end up sharing with their neighbors.

Both the members and the non-members we interviewed said to make the report card most effective for average readers, the consequences of poor water health need to be made personal for people. Individuals want to know how water quality will affect them directly. This is a perennial finding of our water protection research, and this current work is no exception.

"I just think for the average lay person this would be too complicated. And it's like, really, what are these grades' effect? …a D in this, okay, so how does that translate to, how is that going to affect me and my health and my wellbeing? That's the bottom line."

"Now, what I sense in the neighborhood…(people) just want to know that if their kids walk in the stream, the kids aren't going to get anything."

4. In the end, readers want to know explicitly that engagement is a priority, because engagement is important to *them*.

During discussion of the South River report card, where "Community Engagement" is held up as a priority, the focus group moderator paused to ask one respondent why she was reacting so positively. For this respondent and others, community engagement moves beyond individual engagement, and identifies how the organization is connected in the community, and who else is involved in the work.

Moderator: *"You're smiling. Tell me more about what you're pointing at and how come you're smiling."*
Respondent: *"Well, that was the very first report card that I saw, I know it was on, I could go to that website, but this actually tells me what I'm looking for, specifically 'community engagement' that's exactly what I was looking for."*
Moderator: "*Now that you've seen community engagement, what are you going to do about it?"*
Respondent: *"I'm going to read it. It's also an acknowledgement so you know other entities that are part of it so you know who's contributing in the community."*
Moderator: *"Is that a good thing or a bad thing?"*
Respondent: *"That's a good thing, I think."*
Moderator: "*Because?"*
Respondent: *"Then you know how tight the community is and…how serious people are taking interest in this particular body of water."*

5. Beyond local water quality readings, report cards can find other ways to be more relevant to their watersheds.

GOVERNOR RECOGNIZES WATERSHED FARMERS' COVER CROP EFFORT

Thank a farmer in the Chester River watershed for their cover crop efforts, which play an important role in the overall health of the Chester River. Cover crops are a seasonal, nutrient absorbing green crop planted after traditional agricultural row crops have been harvested, prior to the next season. By absorbing residual soil nitrogen and phosphorus left from fertilizer applications and naturally produced soil nutrients, cover crops help reduce nitrogen and phosphorus infiltration to both ground and surface water. Cover crops also help to prevent soil erosion, reducing loss of valuable soil as well as reducing turbidity in receiving streams. Reduced turbidity is important to the growth and survival of sub-aquatic vegetation.

Photo by: Tyler Campbell

During 2010, farmers in Queen Anne's county planted 39,631 acres of cover crops and the farmers in Kent County planted 43,227 acres of cover crops. These two counties lead the charge in Maryland's record breaking cover crop planting that helped prevent an estimated 2.4 million pounds of nitrogen and over 80,000 pounds of phosphorus from entering the waterways. Maryland Governor Martin O'Malley announced in January 2011, "Our farmers continue to show their leadership in the Chesapeake Bay restoration efforts by planting a record number of acres of cover crops, exceeding their two-year goal by 20 percent. Cover crops are the workhorse of our Bay restoration efforts. Maryland is committed to achieving our Bay restoration goals by 2020, five years ahead of any other state in the watershed. The fact that farmers exceeded their goal and helped us get 60 percent of the way toward our overall two-year goal across all sectors shows that we can reach our early target." We encourage everyone in the Chester River watershed to join Governor O'Malley in thanking all farmers who planted cover crops and encourage those who have not yet done so to enroll next year.

REDUCE NUTRIENT LOADING THOUGH IMPROVED SEPTIC SYSTEMS

Since Maryland's Bay Restoration Fund was established in 2006, Chester River Association has been helping homeowners take advantage of the money available to upgrade their septic systems and reduce their nitrogen output. Biological Nutrient Removal (BNR) systems enhance conventional septic systems by adding oxygen and reducing nitrogen discharge by approximately 50%. In 2009, Maryland signed into law a bill that requires all new and existing septic systems needing repair within the Critical Area (land within 1000 ft. from mean high tide) to upgrade their septic systems with BNR technology – another victory for the Chester River and the Chesapeake Bay. To date, more than 100 BNR system upgrades in Kent County and 180 in Queen Anne's County have been completed.

MAKE A DIFFERENCE, SUPPORT THE CHESTER RIVER ASSOCIATION

Support the Chester River Association:
-Donate or become a member
-Become a Chester Tester
-Volunteer for other stewardship and environmental activities
-Encourage neighbors to help protect the Chester

Contact Us:
Email: info@chesterriverassociation.org
Phone:(410) 810-7556
Web: www.chesterriverassociation.org

The Chester River Report Card included recognition of farmers' cover crop effort, and the contribution that is making to water quality. Respondents in the Chestertown focus groups, whether they had a direct personal connection to agriculture or not, appreciated this local focus and the message it sent about a partnership with agriculture.

The Eastern Shore audience was also distinctive in expressing a strong sense of the *economic* importance of the Bay to local families and communities.

The urban, Baltimore audience is acutely focused on the Harbor regardless of where they live in the city. There is much less psychic connection to a local stream, or to water generally. Concern for water protection often centers on a more general concern for a clean, livable neighborhood and city. With the Harbor as its centerpiece, a Baltimore report card should make connections where it can to the impact of water quality on a broader set of neighborhood concerns

LAYOUT AND DESIGN FEATURES

1. Many focus group participants felt a booklet format gives the document shelf life, and a helpful sense of organization and professionalism.

We tested report cards that were laid out in an 8½ x 11" format, and others that were organized in booklet format. More often, when asked to sum up their impressions of the report card formats they had reviewed in the focus group, participants gravitated towards the booklet form. They appreciated what they saw as a greater sense of professionalism conveyed by the booklet format, as well as several other specific advantages:

- A number of participants said a booklet is more easily kept alongside other references at home. It might lend itself to reading in small doses over time. To illustrate that point, this Chester River constituent commented on what he likes about the South River Report card:

  "I don't think I'd sit down and read the whole thing through. I think I'd look through part of it, but then sitting there with my cup of coffee in the morning, or whatever, I'd be looking at – …oh, let's see, how was their dissolved oxygen, let me check and see that."

- They said a booklet provides a logical sense of organization of content. It also conveys a sense of professionalism, "because it's more like a book; it's not a sheet of paper."
- Some just liked the tactile experience of opening a booklet and paging through it. These readers said that is simply a pleasing experience, with the format inviting them to page through and explore the report card's full content. As one who also advocated strongly for an active Facebook presence said, "Everybody still likes to have something in their hand."
- A durable printed version has another kind of shelf life, some said, as it would be picked up by visitors, leading to discussion and possible engagement.

"Email is great for us to read it, but the paper version on the coffee table is there for when people are coming and they're visiting and they…say, 'Oh, you care about this stuff,' and they thumb through it. Maybe they come up with a question, and maybe someone else has now started to pay attention (thanks to the report card)."

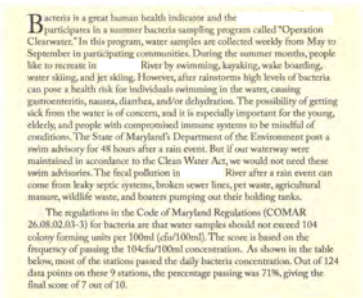
2. Most readers strongly assert an imperative to make the presentation of information brief and to the point.

Regardless of the specific topic, most readership studies today encounter a need on the part of the audience for summarized text, subheads, illustrative graphics, use of color for emphasis, and other methods that give the reader quick takeaways of the major points. This study is no exception.

This finding does not suggest that the report card needs to be dumbed-down or gutted of its content. But it does mean that attention must be paid to making the information digestible and accessible to the audience through good formatting. Here are more specifics on this finding:

- The West and Rhode Rivers Report Card was often singled out by respondents throughout this study as being well-organized and presenting information in a logical, digestible way. Even though this report stretches over 12 pages, respondents found it approachable and readable. One respondent's comment is typical of others who appreciated its organization and its brief, summarized text:

"I think that's what it is [better organized]. And there are visual cues to help people figure out what's important, what isn't…And it breaks it out into a short little synopsis. So if you don't want to read everything all at once, you can read a little bit at a time, and then you want to go back, because it's kind of interesting."



Bacteria is a great human health indicator and the participates in a summer bacteria sampling program called "Operation Clearwater." In this program, water samples are collected weekly from May to September in participating communities. During the summer months, people like to recreate in River by swimming, kayaking, wake boarding, water skiing, and jet skiing. However, after rainstorms high levels of bacteria can pose a health risk for individuals swimming in the water, causing gastroenteritis, nausea, diarrhea, and/or dehydration. The possibility of getting sick from the water is of concern, and it is especially important for the young, elderly, and people with compromised immune systems to be mindful of conditions. The State of Maryland's Department of the Environment post a swim advisory for 48 hours after a rain event. But if our waterway were maintained in accordance to the Clean Water Act, we would not need these swim advisories. The fecal pollution in River after a rain event can come from leaky septic systems, broken sewer lines, pet waste, agricultural manure, wildlife waste, and boaters pumping out their holding tanks.

The regulations in the Code of Maryland Regulations (COMAR 26.08.02.03-3) for bacteria are that water samples should not exceed 104 colony forming units per 100ml (cfu/100ml). The score is based on the frequency of passing the 104cfu/100ml concentration. As shown in the table below, most of the stations passed the daily bacteria concentration. Out of 124 data points on these 9 stations, the percentage passing was 71%, giving the final score of 7 out of 10.

- By contrast, report card text like that shown at left was seen as too dense and wordy and "overwhelming." It needs bullet points and summarized text, many said, just to make it approachable. The risk for an organization that gathers and publishes solid information but formats it poorly is that the information will not be read by the audience, and the outreach opportunity will be lost.

- This observation is true of highly-sophisticated audiences that want deep content but still need it summarized for quick review, and general public audiences that are technically unsophisticated or less educated and just need to grasp the main ideas of a publication.

"…I'm a visual person…I'm not going through all this wordage just to find out something. So that's what I hope to see, something I can look at, and be real simple."

- Regardless of their overall format, report cards that managed to present their *most important* information on a single page were especially well-received. In this busy, information-heavy culture, readers are impatient to get to the point quickly.

"I would love a big, really easy to read, aesthetically pleasing thing that gives me the straight-on statistics, not like a bunch of paragraphs in Times New Roman. I don't need that. I need upfront, give me the statistics."

Implication: For multi-page report cards, the implication of this finding is a need to create an executive summary page or two-page spread that effectively conveys the most important observations of the report card, that is easily found by the reader within the document, and that could literally be lifted out or printed separately as a standalone.

3. Among all audiences, whether experts or general public, there was strong push-back against technical terminology that appeared in some report cards.

It may be surprising to water quality experts who work with terms like "turbidity" or "dead zone" every day, but the general public has difficulty with those terms and needs them defined. Furthermore, if a technical term is used in more than one place in a report card publication, it needs to be defined each time, because the public is not reading report cards in a linear fashion, and they will miss a definition that is provided on a prior page.

Where possible, technical terms should be replaced with more common terms that the public can intuitively understand. This respondent makes a point about the term "turbidity":

"I like that they defined 'turbidity' because I didn't want to say, but I didn't know what turbidity was on the other (report card). So here I'm like, oh, water clarity. If it's for a group of people that are engaged in this, I can see why they use the word 'turbidity.' But if it's for the general public, why not just say 'water clarity?'"

In multiple focus groups, the term "dissolved oxygen," summarized as "DO," was questioned by respondents. One participant asked in frustration what the term meant, pronouncing it as "doo":

"I missed what 'DO' is. I'm guessing I have to read closer to figure out what that is because they keep mentioning 'DO' and I don't know what it is."

A particularly dry and scientific report card received this assessment in a focus group of watershed organization members – in other words an audience that is at least somewhat accustomed to consuming information about water quality issues:

"I mean, it looks like there's a lot of information here. Again, it's not useful information I think for the average public reader. I don't know. It's hard, I haven't read it. It looks like a lot of information."

Said another about this report card:

"I think the information isn't easily understood, for me, at least. It's not that it's too scientific, I just feel like I need to sit down for a little while and read this and try to figure out what they're trying to explain to me."

A third said:

"A little too scientific. I think it's for someone who already has an understanding of what these charts and numbers mean."

Naturally, a public outreach document like a report card should not evoke that kind of a reaction. Water quality experts and advocates would be surprised by the terms that do *not* connect with the public. Consider these examples:

- In our 2008 Maryland statewide survey for the Chesapeake Bay Trust, only 18% of the public said they live in a "watershed."
- In a 2011 focus group study for the Clean Water Healthy Families Coalition, only two participants out of 16 across two focus groups could describe what was meant by a "dead zone." Naturally, all of them knew it was an undesirable concept, but the specifics escaped them.

Implication: Never underestimate the need of the audience to have terms and concepts explained. Before a tributary report card is published, ask several laypeople to read it and flag language that is difficult to understand, is too jargon-filled, or needs definition for a non-scientific audience.

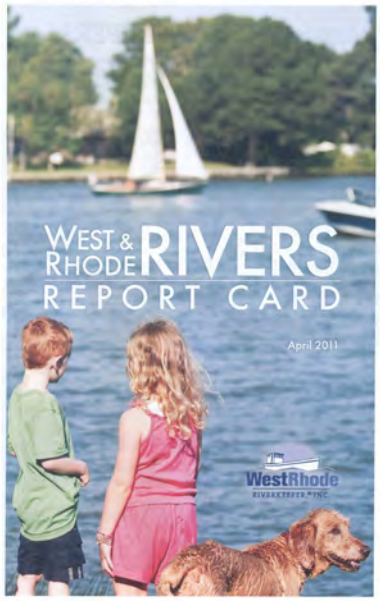
Good editing, and not stretching the attention span of the audience, is important. In particular, readers do not want the organization to report everything it knows, just the main ideas. The problem with some of the report cards evaluated was not too much science but just too much information, this general population respondent suggested:

"It happens with environmental groups, they want to tell you everything. You have to temper that. There is good information here, but you can't give it to us in nine point font with seven paragraphs. You just can't. Temper it."

Referring to a detailed report card write-up on underwater grasses, this fellow respondent colorfully expressed impatience with a level of detail he considered unnecessary:

"For an example, underwater grasses, down into the first part of the second paragraph, 'According to the Maryland Code of Regulations, COMAR 26.08.02.03-3, the underwater grass acreage restoration...' Yammer, yammer, yammer. That could have been edited much better."

4. Readers want imagery that draws them in, and is self-explanatory.

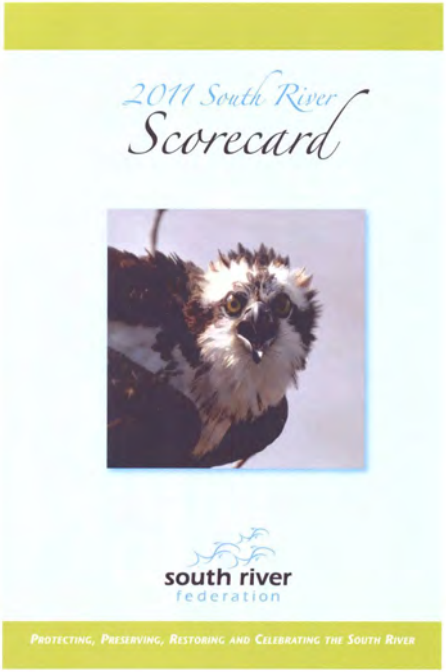


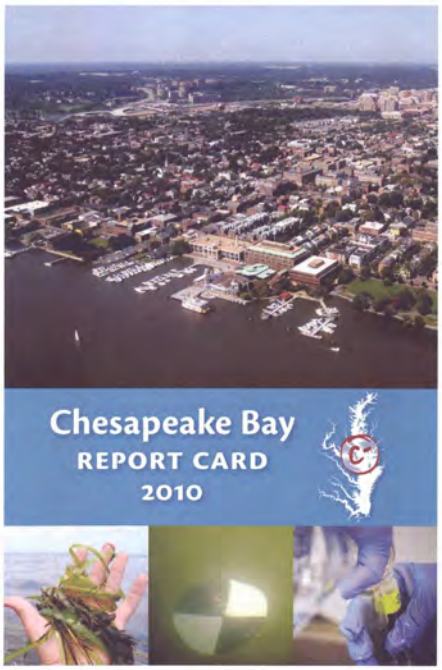
As an example of what is being done right, the West and Rhode Rivers Report Card was extremely well-received for its inviting cover image. Though the occasional focus group respondent criticized this image as too idyllic considering the largely negative content of the report card, most people found it to be an expression of what they hoped for the waters, and an image that invited them to open the publication and look further.

West/Rhode Riverkeeper also received high marks from the focus group evaluators for the *variety* of images used throughout the publication. The publication blended photographs, maps, simple tables, and understandable charts and graphs to keep reader interest from page-to-page.

South River Federation's striking cover image of an osprey generated much focus group discussion, as well. Though not as warm and friendly perhaps as the West/Rhode cover, South River's cover image had great visual impact. It is attention-getting and might cause the publication to be picked up.

What generated the discussion about this image, though, was *not* that it pictured wildlife. On the contrary, some respondents played down this image saying, "I think I'm going to read about a bird. I have no reason to believe I'm dealing with the environment." What interested focus group respondents about this image and generated the most discussion was speculation about the bird's expression and unusual appearance. Was the bird "angry," or "oily," or just "young?" Whatever the case, the bird has personality, and that's what drew in these respondents.





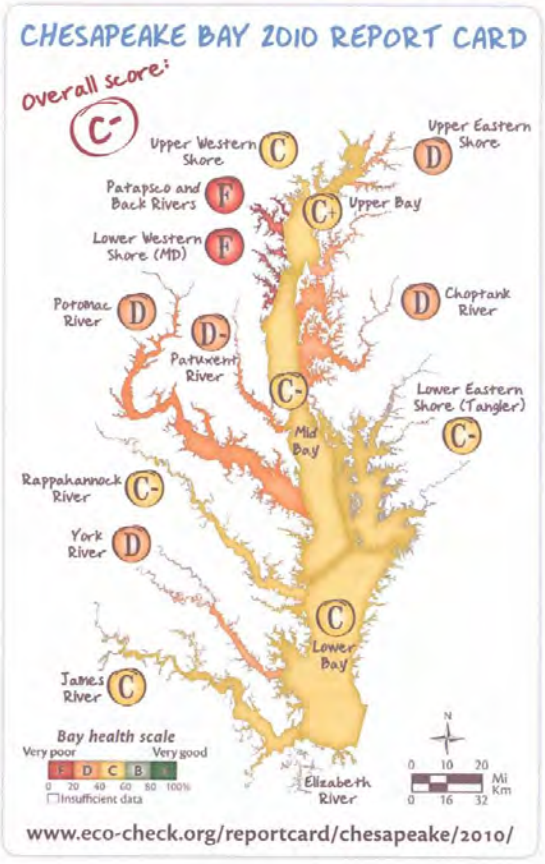
As a third example, this Bay-wide report card cover did not connect well for focus group participants. They suggested that this cover was "not cohesive."

- The highly urbanized photo that dominates this cover seemed inappropriate and unappealing. They wondered if this photo was meant to be a statement about overdevelopment, or about how a city could co-exist with the Bay. This image is not what the Bay calls to mind for most of them. It "pushed me away" said one respondent.
- Were the grasses pictured in the lower left desirable or undesirable, they asked, and what were the other images meant to symbolize?
- From this discussion, they clearly indicated that they want a cover that is visually interesting, unified, and appealing.

In other comments about layout and graphics, focus group participants offered these observations:

Maps

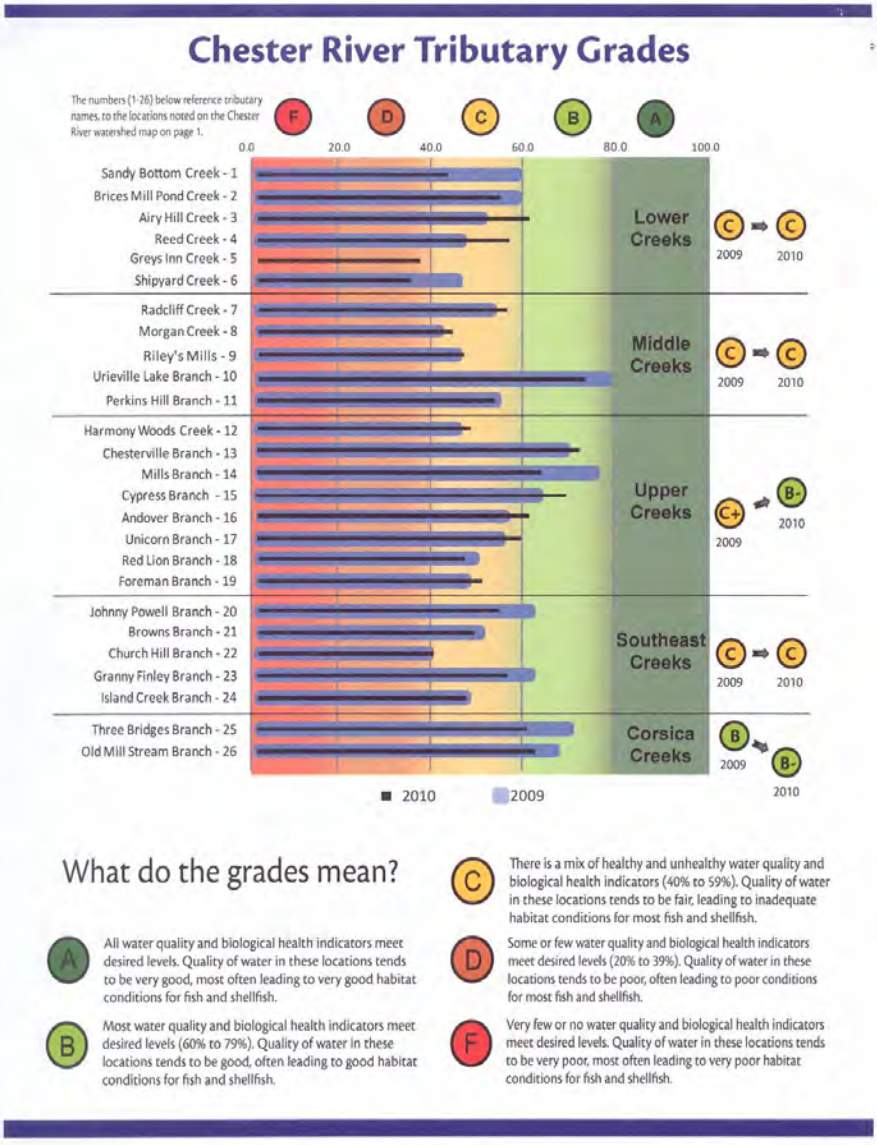
- To be effective, maps in any geographic area need to be focused on a single objective, and use clear symbology. A report card map we tested that used symbols of different sizes, colors, and numbers without clear explanation raised more questions than answers. A clear legend, in a font large enough to be read, must be offered. <u>This map found in the EcoCheck report card was found to be simple, clear, and of interest to all</u> because of the water quality comparisons it made around the Bay. Though it was too general for many people, the idea behind the Bay-wide report card of comparing one's own tributary with the larger picture was very appealing.
- Maps are extremely useful outside the most urban areas. <u>On the Eastern Shore, in fact, detailed information down to the smallest tributary was eagerly</u>



consumed. Suburban respondents were generally interested in locally-relevant maps, though their interest had its limits. Baltimore residents were more impatient with the maps they viewed, though to be fair to them, there were no local report cards for Baltimore – and therefore no local maps – to be evaluated.

Complicated Graphics

- Similar to the reaction to maps, this complicated graphic drawn from the Chester River report card elicited very different responses depending on the audience. In the Western Shore focus groups, where most respondents were unfamiliar with the Chester River watershed, people often thought this graphic was too complicated. But in the Chestertown focus groups, participants dwelled on this page and particularly enjoyed the ability to compare tributary to tributary, as well as year-to-year. With intimate knowledge of local geography, particularly in a rural setting, the appetite of an audience for this kind of local detail is much greater.



Photographs

- It cannot be overstated that readers love photographs. Readers particularly want to see pictures of people smiling and taking stewardship actions – or enjoying water-related recreation, fishing, or crabbing – in real-world settings.
- Viewing the report card publications we tested, though, respondents were often critical of photos that were pixilated or too small. In today's digital world, image quality is important to consumers of information, and they expect that even home-grown publications will include crisp, high-quality photographs.

"But I think my criticism would be the same across all brochures is that the graphics (are low-quality). We live in a very savvy world. This is like what I would have expected in the 1980s and 1990s."

- As with technical language, photographs were sometimes too technical. Readers are less interested in photos of a testing device than they are a graphic depiction of clean or silted water.

A Clean, Uncluttered Appearance

- In general, readers want a clean and uncluttered layout. They want large fonts and a report that is generally easy to read.

"The thing that turns me off is like the size of the print and the format. If it's cluttered then that means I have to stop and think, put on glasses to read it and so forth. (I'm) probably not going to bother."

THE DIGITAL DEMINSION

Though this was mainly a printed publications test, we explored briefly how report cards could manifest themselves online beyond simply posting a PDF on the organization's website, and how they might tie in to social media.

1. Social media can tie in to the report card and keep it alive throughout the year.

It happened that the Chestertown general population group was composed entirely of people under the age of 30. They had a deep and lively discussion about the use of social media, and how that might effectively be tied in to a printed tributary report card publication. A key observation was the impact of knowing through social media how many other people are involved with the organization, and specifically who they are.

"People are most likely to get up, physically get up and do something, when they see a lot of other people doing it. When you can get the word to enough people to do something one day, (it's encouraging) just see enough people there. If I know 300 people are going to go do that, yeah, I'll go help. Because that's going to make a difference, right?"

Tweeting quick facts and tying back to the report card or stewardship-related content on the organization's website can keep the quality readings alive through the year, and build better engagement.

> *"I guess I follow on Twitter a couple of different organizations... And they'll post a shocking fact in the mornings, some horrible thing that has come of this. It will make you stop and think. Even if it's not something you can immediately do something about, you can still stop and think and contemplate. Like, what am I doing to help this organization that I'm following, that I claim to be friends with on Facebook, or whatever? I think on Twitter, if these organizations posted, today, this many fish died…or this, this and this..."*

For those respondents who understand social media and believe in the cause of clean water, there is an urgency to use social media as an engagement tool.

> *"We've got to connect to social media more than just saying visit our website…the hardest thing to do with any of these organizations is connect to an audience. …If you don't connect to an audience… you're nowhere. You just spent a whole lot of money to produce a very slick brochure that nobody's going to read. Excuse me? What was the point of that, in spending money that is not bringing you a return in getting people out there to realize what's going on and to want to do something about it?"*

Younger focus group participants in Chestertown who actively use social media explained that the simple act of "liking" an on organization is the crossing of a psychic threshold for them, and the first step in joining. It tells not only others, but it tells themselves, that this cause is important to them and they need to look into it more closely.

> *"It should be a constant reminder of something that suggests if you want to be part of this, not send us a check, although that would be great. Its follow us, join us on Twitter, join us on Facebook. Be a part of the solution…"*

2. As report cards become more standardized in the future, hosting them online offers some great opportunities.

This research has identified the imperative of keeping the information brief and readable, not going in to too much depth for the general reader. As report card information moves more and more online in the years ahead, a tremendous opportunity lies in including links to much deeper, more technical information for readers who are interested, while keeping the topline presentation of data more quickly readable.

The other great opportunity offered by the Web, should report cards and their grading systems become more standardized, will be the ability to provide a Bay-wide perspective, and to compare one's own tributary to others around the Bay. As a vision for the future, some thought that an online interactive map that would enable both a Bay-wide picture of water quality, as well as the ability to dive deeply into an individual tributary, would be a powerful tool. This savvy Chestertown respondent outlined his vision:

> *"I think it ought to lead to a website that's an interactive website so that living in Chestertown, I could go and click on the Bay, if I had interest in any part of the Bay. Ultimately, get up into the Chester River in Chestertown and then find out what the causes of the pollution are – the sources, and then what were the corrective actions. Then I could decide what role I could play, either personally in my home, or professionally as a consultant or a volunteer group – like we are tonight – whatever the case may be."*

Conclusion

This evaluation provides a clear set of findings and recommendations for producing a tributary report card that will be more accessible to both members of watershed groups and the general public.

Readers want report cards that get to the point quickly and do not confront them with technical jargon. They want to know immediately the short list of actions they can take personally to help move these grades in a positive direction. To absorb the information readily, they want inviting photos and graphics, a clean, uncluttered appearance, and professional formatting and design. The digital realm offers new possibilities of moving water quality reporting to a whole new level of customization and engagement.

It has been a pleasure undertaking this evaluation. Please do not hesitate to call on us for further interpretation and application of these findings.

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