



ANACOSTIA
WATERSHED
SOCIETY

#MusselPower

Telling the
story of the
Anacostia
River's Mussels

Why Mussels?












Anacostia River Tunnel

- March 20th, 2018, 7 miles long, holds up to 100 million gallons of sewage and stormwater
- 3 billion gallons of combined sewage overflows (CSOs) out of the Anacostia
- Exceeded expectations by achieving an 88% capture rate in 6 months!
- 150 tons of trash!



2018 ANACOSTIA RIVER REPORT CARD

		SCORE(%)	GRADE	TREND
Water Quality Indicators (Quantitative)	Dissolved Oxygen	48	F	
	Fecal Bacteria	63	D	
	Water Clarity	52	F	
	Chlorophyll <i>a</i>	80	B-	
	Submerged Aquatic Vegetation	100	A+	
	Stormwater Runoff Volume	59	F	
Remediation Indicators (Qualitative)	Toxics Remediation	43	F	
	Trash Reduction	56	F	
OVERALL GRADE		63	D	

Full report available online at: <https://www.anacostiaaws.org/state-of-the-river-report-card>

The following parameters are used to assess water quality and conditions:

Dissolved Oxygen is critical for the survival of aquatic life and ecosystem sustainability. A score of 100% means that the water has equal to or more than 5mg/L of oxygen all the time.

Fecal Bacteria contamination is caused by sewage discharges and leaks, as well as from pet and wildlife waste. A score of 100% means that fecal bacteria levels are low enough that the river is safe for swimming at all times.

Water Clarity is a measure of light penetrating the water column; this affects the health of aquatic grasses. A score of 100% means that the water is clear enough to see through at at least 4 1/4 feet or 1.3 meters.

Chlorophyll *a* is the measure of microalgae biomass; this can impact water clarity and dissolved oxygen levels, and indicates the amount of nutrients like phosphorous and nitrogen. A score of 100% means that the body of water has only the appropriate amount of microalgae biomass.

Submerged Aquatic Vegetation requires light to thrive and is essential habitat for young fish and other aquatic life. A score of 100% means the Anacostia River has at least 20 acres of SAV bed.

Stormwater Runoff flushes trash and toxics from paved areas and erodes stream banks, filling the river with sediment. A score of 100% means that the peak stream flow is the same as averaged values from recorded historical levels (1938-1942).

Toxics Remediation in the Anacostia River evaluates the efforts to remove and contain PCBs and PAHs in the riverbed that potentially pose chronic damage to people and wildlife. A score of 100% means that the toxic sediment is fully addressed and remedied.

Trash Reduction evaluates the efforts to reduce trash in the Anacostia River and the surrounding tributaries. A score of 100% means that trash pollution is fully addressed by local jurisdictions and no trash is visible on the river.

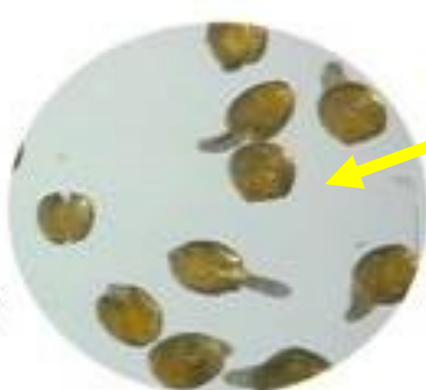




Fish host



Glochidia larvae



Juvenile mussels



Adult mussel

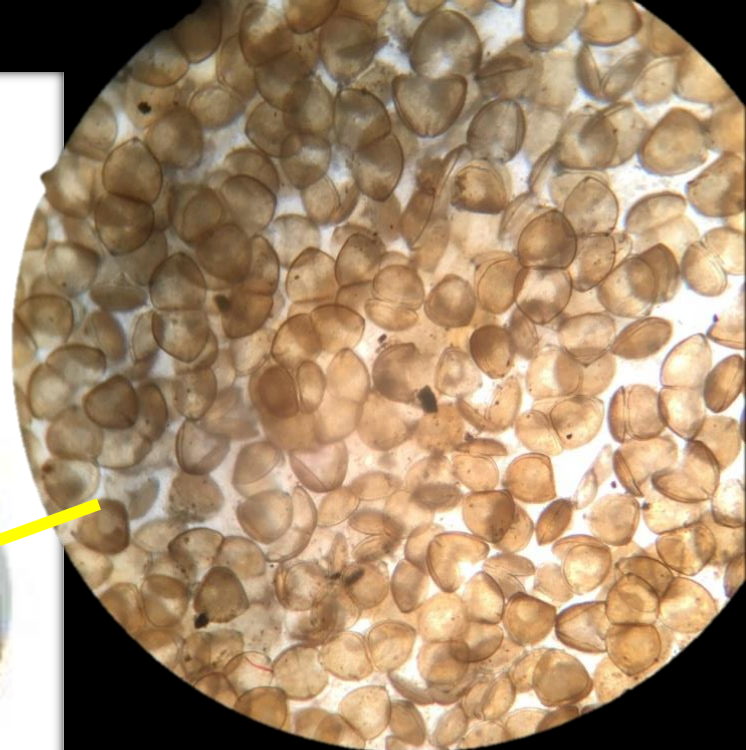




Photo: Chris Barnhart

Freshwater Mussels of the Anacostia River

- “Assessment of the freshwater mussel community of the tidal-freshwater Anacostia River” by Matt Ashton (2016), Maryland Department of Natural Resources. Fall of 2015 to the spring of 2016.



Findings

- *Total species richness: 6 species*
- *Off-channel wetlands are functioning as refugia/sources*
- *Main stem of the Anacostia River: 2 species, **0.04 individuals/ m²**. Very poor*
- *Kingman Marsh: 6 species, Eastern floater and Paper pondshells the most common. **1.5 mussels/ person-hour***
- *Heritage Marsh: 3 species, only shells of Eastern floater, Paper pondshell and Eastern pondmussel*
- *Dueling Creek: no mussels found*
- *Kenilworth Marsh: 4 species, **1.3 mussels/ person-hour***
- *Bladensburg (built) Wetlands (ANA-11): 2 species, only shells*



Species Diversity

Maryland / District
of Columbia



Eastern Elliptio (*Elliptio complanata*)



Eastern Floater
(*Pyganodon cataracta*)



Critically Imperiled-Imperiled/
SGCN

Eastern Pondmussel
(*Ligumia nasuta*)



Status Uncertain

Eastern lampmussel
(*Lampsilis radiata*)



Vulnerable/Watchlist

Paper Pondshell
(*Utterbackia imbecillis*)



Imperiled/State Rare

Atlantic Spike
(*Elliptio producta*)



Critically Imperiled-Imperiled/
SGCN

Tidewater Mucket
(*Leptodea ochracea*)



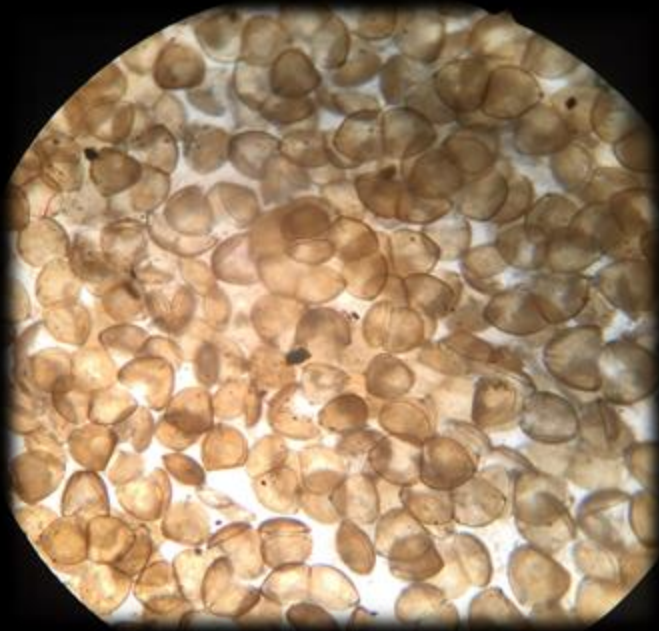
Vulnerable/Watchlist/SGCN

Alewife Floater
(*Utterbackiana implicata*)

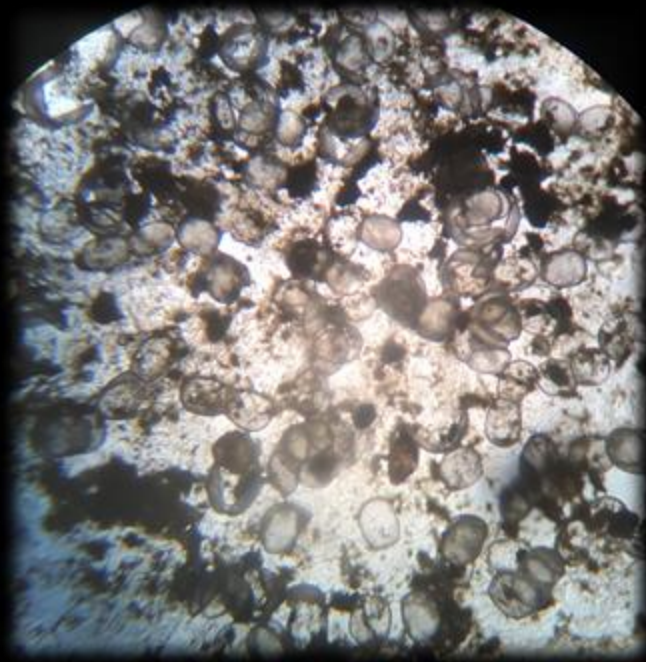
They are reproducing!



Eastern Floater, inside SAV cage at Buzzard Point



Glochidia of Alewife Floater, Kenilworth Marsh



Glochidia of Eastern pondmussel, Buzzard Point



Eastern pondmussel, Kenilworth Marsh

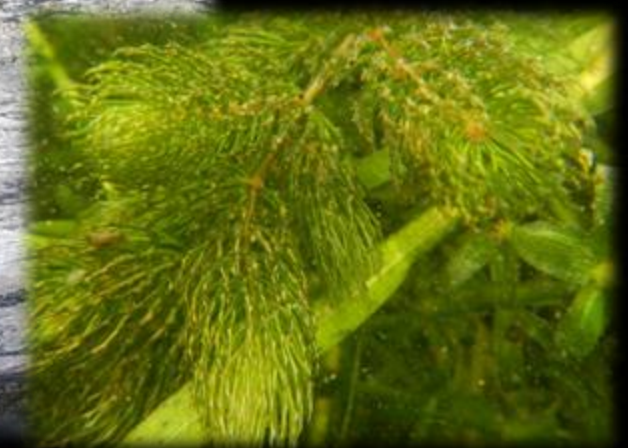
SAV Cages as Refugia



Alewife floater



Eastern lampmussel



USFWS Summer 2018 Growth Study

Fred Pinkney, Ph.D.



January, 2018



August, 2018

AWS Mussel Restoration

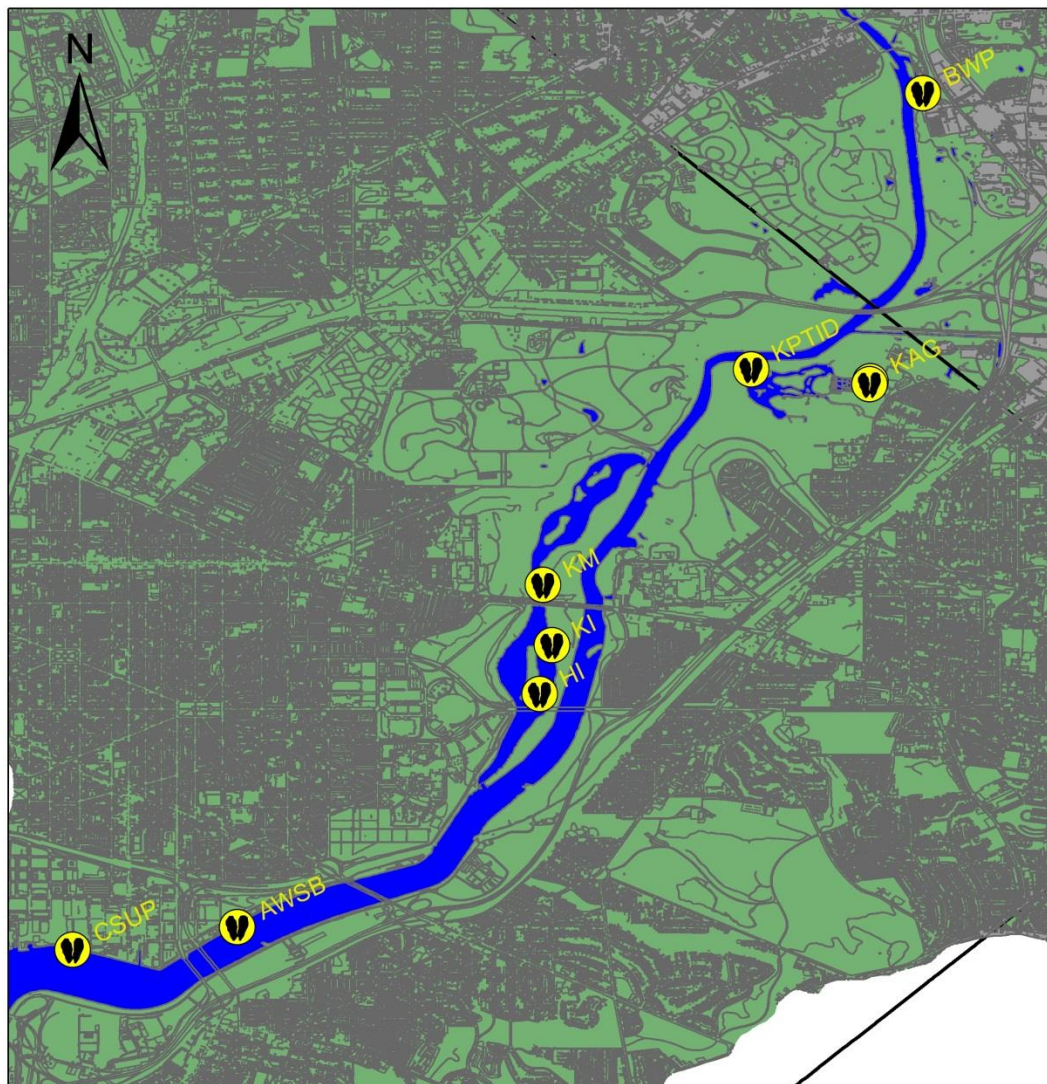









- Propagation of mussels from Anacostia River mussels at the Harrison Lake National Fish Hatchery / Virginia Fisheries and Aquatic Wildlife Center.
Rachel Mair and fellow staff (USFWS).



Freshwater Mussels Floating Basket Sites

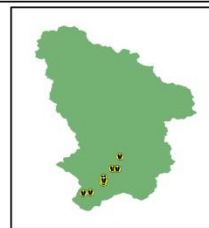


Legend

-  Mussel Basket Sites
-  Impervious surfaces
-  Jurisdictions
-  Waters
-  Anacostia River Watershed

0 0.3 0.6 1.2 1.8 2.4 Miles

Coordinate System: GCS North American 1983
 Datum: North American 1983
 Units: Degree



AWS Mussel Restoration

- Growth
- Survival
- Site suitability
- Reproduction
- Conservation of SGCN
- Some tissue analysis (nutrients, microplastics?)
- More mussels = more biofiltration



Photo: Gregg Trilling



June, 2018, 1/2"



October, 2018, 1.5"





Mussels in the Classroom

- Modeled after Ohio River Foundation program to start in the winter of 2019
- 3-part, hands-on education program (classroom, field experience and boat tour)
- 5 schools; 250 elementary students will keep juvenile mussels in their classrooms and then release them into baskets
- Eastern pondmussel (*Ligumia nasuta*)



Communicating about #MusselPower

- Story that tells itself
- Diverse Funders who communicate about the project
- Passionate Spokesperson
- Get silly with it



We're here to help you grow, little mussel!

Until now, most of the evidence you've seen of the Anacostia River's rejuvenation has been above the water. Thanks to your support of the Anacostia Watershed Society, now we can go deeper and bolster an unsung species that has the potential to make a heroic impact on the health of our river...

**ANACOSTIA
WATERSHED
SOCIETY**

The image is a composite. On the left, a child in a purple shirt is kneeling on a wooden platform, collecting mussels into a clear plastic container with a blue lid. In the center, there is a close-up of several large, dark, oval-shaped mussels. On the right, a hand is holding a single mussel. At the bottom center is the logo for the Anacostia Watershed Society, which includes a stylized landscape with a bird and the text 'ANACOSTIA WATERSHED SOCIETY'.

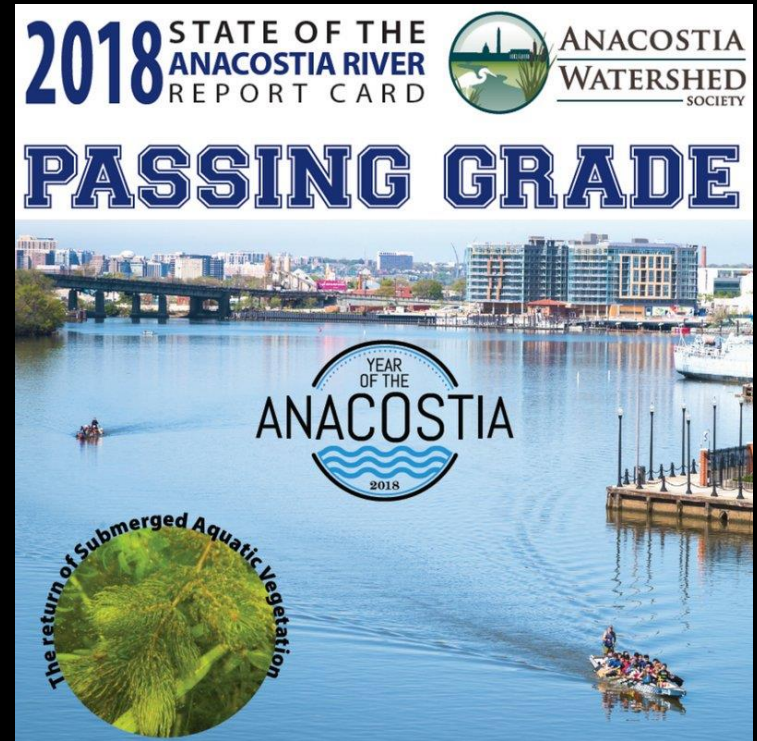
Story that tells itself

- Chesapeake Bay Oyster Program
- “Critters that clean the water”
- Striking Before and After



Story that tells itself

- Timing
 - Year of the Anacostia
 - DoMore24 as a Blitz
 - Passing Grade on Report Card in June



Story that tells itself

 **Anacostia Watershed Society**
@anacostiaws Follow

We found an Eastern Lampmussel inside one of our SAV cages at Buzzard Point that's the 8th spp. of mussel ID'd in the [#Anacostiariver!](#)



7:07 AM - 6 May 2017

1 Retweet 21 Likes 

2 1 21

 **Anacostia Watershed Society**
@anacostiaws Follow

Mussel Power!! This is what 9 adult [#AnacostiaRiver](#) freshwater mussels can do in about an hour of water filtering (tank on the right without mussels) [#YOTA2018](#)



10:27 AM - 21 Jun 2018

34 Retweets 101 Likes 

4 34 101

Funder Diversity

- Amplification through many channels
- Many stakeholders who also want to publicize
- Press releases with wider reach

News Releases from Region 03

\$33,000 Urban Waters Grant Awarded to Anacostia Mussel Propagation Project

08/09/2018

Contact Information:

David Sternberg (sternberg.david@epa.gov)

Funder Diversity

- One press release

News Releases from Region 03

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Chesapeake Bay
MAGAZINE

ABOUT US

NEWS ON BOATS CULTURE & ENVIRONMENT DESTINATIONS
EVENTS

Anacostia River Puts New Muscle into Mussel Population

August 11, 2018

The answer to cleaning up the Anacostia River? It may be mussels

by Victoria Sanchez/ABC7
Wednesday, August 22nd 2018

MENU SEARCH



DONATE

AUG 27, 2018, 5:14 PM

The Anacostia River Is Mussel-ing Its Way To Clean Waters



Rachel Kurzius

Funder Diversity

- Signal Boosted by Friends and Allies

US EPA Mid-Atlantic @EPAregion3

.@anacostiaws will flex its #mussels with a Five Star and #UrbanWaters #EPA + @NFWFnews grant. The project will help to restore freshwater mussel populations in the Anacostia River. More here:

\$33,000 Urban Waters Grant Awarded to Anacostia Mussel ...
EPA News Release: \$33,000 Urban Waters Grant Awarded to Anacostia Mussel Propagation Project
epa.gov

10:44 AM - 9 Aug 2018

4 Retweets 12 Likes

Anacostia Watershed Society @anacostiaws

Mussel power!

US EPA Mid-Atlantic @EPAregion3
.@anacostiaws will flex its #mussels with a Five Star and #UrbanWaters #EPA + @NFWFnews grant. The project will help to restore freshwater mussel populations in the Anacostia River. More here: go.usa.gov/xUsPP

8:33 PM - 9 Aug 2018

3 Retweets 20 Likes

3 20

Driving Traffic

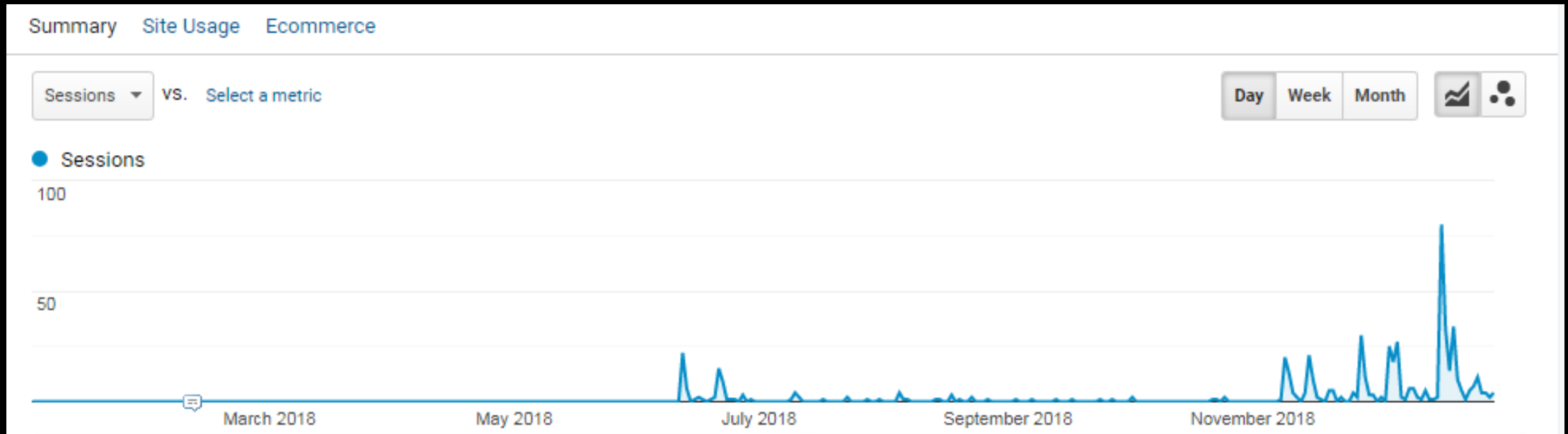
- Mussel Popularity on AWS Website

Page	Pageviews	Pageviews
	967 % of Total: 0.65% (149,895)	967 % of Total: 0.65% (149,895)
1. /blog/moving-our-mussels.html	146	15.10%
2. /blog/anacostia-river-mussel-power-growing-our-mussels.html	119	12.31%
3. /blog/anacostia-river-mussel-power-looking-promising.html	79	8.17%
4. /blog/anacostia-river-mussel-power-where-do-we-get-these-mussels.html	72	7.45%
5. /blog/anacostia-river-mussel-power-looking-promising.html?eType=EmailBlastContent&eid=13c8acd9-f6b1-4845-b96f-4ba9064f0202	63	6.51%
6. /blog/anacostia-river-mussel-power-how-many-mussels-species-do-we-have-in-the-river.html	62	6.41%
7. /blog/anacostia-river-mussel-power-meet-our-lampmussels.html	57	5.89%
8. /blog/anacostia-river-mussel-power-into-the-classroom.html	44	4.55%
9. /blog/moving-our-mussels.html?eType=EmailBlastContent&eid=e48015ce-786d-44a9-9f2f-9e9e436f87b6	35	3.62%
10. /blog/anacostia-river-mussel-power-where-do-we-get-these-mussels.html?eType=EmailBlastContent&eid=13c8acd9-f6b1-4845-b96f-4ba9064f0202	27	2.79%



Driving Traffic

- Mussel Popularity on AWS Website



Driving Traffic



Anacostia Watershed Society

Like This Page · June 21, 2018 · 🌐

Mussel Power!! This is what 9 adult #AnacostiaRiver freshwater mussels can do in about an hour of water filtering (tank on the right without mussels) #YOTA2018 #aws

Brian Heilgeist, Susan Cone Scott, Levarr Crosby and 173 others like this. Most Relevant

128 Shares

16 Comments



Cheryl Hill Sanborn Ummm, thats why i dont want to eat shellfish...

30w



Arnold Dailey So put 4.5 million of them in time river we might be awesome

30w

1 Reply



Christine Hoese Very excited to know this! Please introduce more of these great creatures to our rivers! ❤️

30w



Donna An This is my favorite demol I'm so

Press Takes Notice

- Two weeks after popular tweet, one month after report card

Mussels Could Help Make the Anacostia Safe for Swimming

There are already dozens of baby mussels living in the river

WRITTEN BY EMMA SARAPPO | PUBLISHED ON JULY 10, 2018

[Home](#) » [Washington, DC News](#) » [Key to cleaning up...](#)

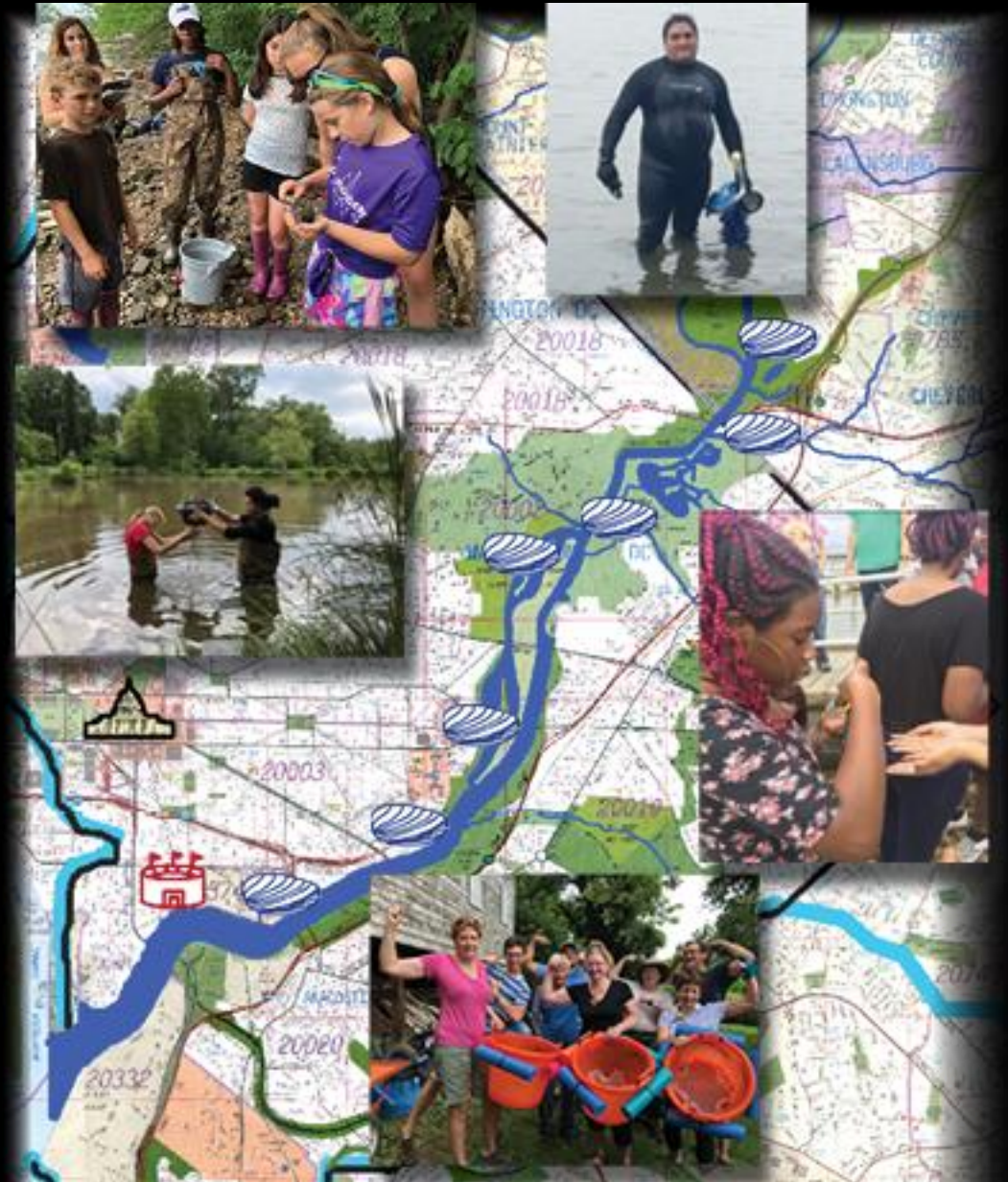
Key to cleaning up Anacostia River? It could be mussel power



By [Kate Ryan](#) | [@KateRyanWTOP](#)
July 11, 2018 4:46 pm

Have a spokesperson

- Having a “go-to” person makes it easier to communicate with the press
- Passion will shine through



Get Silly With it

- Goofy visuals, play with it
- “Mussel” puns



Anacostia Watershed Society
@anacostiaws

Follow



WE DID IT!! Thank you for supporting our MUSSEL POWER! We can't wait to keep you updated on our progress. For now, we'll lick our lips in anticipation of the good things to come for the [#AnacostiaRiver](#) during the Year of the Anacostia! [#YotA2018](#)



9:04 AM - 18 May 2018

1 Retweet 15 Likes



1



1



15

Lessons Learned from Wetland Restoration

- Find visuals that tell the story
- Don't be shy in repeating the story. Toot your own horn!
- Find a storyteller





Follow the #musselpower blog posts at:

www.anacostiaws.org
[@anacostiaws](https://www.instagram.com/anacostiaws)



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