

**Students Save Shad! (Part II)**  
**(Based on a true story.)**  
Carol Montgomery

Performance Time = close to 6 1/2 minutes

Readability = grade 4.8 (grade 4.3 without the words “announcer” and “narrator”)

Cast ( 8+):

Announcer #1

Class (chorus?)

Announcer #2

Narrator #1

Narrator #2

Nick

Julia

Teacher

Mr. Cummins

**Vocabulary:**

waterways

remember

adventure

rescue

polluted

childhood

scrambled

sparkling

swirling

exclaimed

waterfalls

nursery

biologists

Elementary

Potomac River

unfortunately

overfishing

pollution

disappeared

scurried

releasing

hatchery-raised

spawning

wiggly

interrupted

everyone's

excitement

notch

fishway

Washington D.C.

references

molten

Chesapeake Bay

Atlantic Ocean

miraculously

shad fry (i.e., babies)

hopefully

collecting

celebration

successfully

tomorrow

**Students Save Shad! (Part II)**  
**(Based on a true story.)**  
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**Announcer #1:** This is Kids' World News with Part II of this week's top story, "Students Save Shad!"

**Announcer #2:** Clean the river, save the stream,  
Rescue our waterways. Yea, shad!  
See, I DID remember the student's cheer! What's up today? The Great Shad Adventure?

**Announcer #1:** That's right! Part II of the video series will take us on "The Great Shad Adventure" with Nick, Julia, and others.

**Announcer #2:** Finally, I want to hear how the students helped save shad! Poor sad shad. Family eaten. River polluted. Childhood home blocked up by dams. Brings tears to my eyes--almost!

**Announcer #1:** Let's roll the video for the REST of the story...

**Announcer #2:** Here comes the narrator!

**Narrator #1:** Nick and Julia scrambled up the steep cliff and peeked over the edge at the sparkling, swirling waters of the Potomac River. They wondered, "Were there fish in that water?" Nick stared for a minute and then exclaimed...

**Nick:** Wow! I can hear the roar of Great Falls up river. Have you seen Great Falls?

**Julia:** Yes! It's really cool. It has so many big waterfalls and rapids. I didn't try counting them. My dad says some crash down almost a hundred feet!

**Nick:** No wonder fish can't swim past it. I guess they lay their eggs below Great Falls because their mamas couldn't go up the river any higher.

**Julia:** So Great Falls feeds a nursery of baby fish!

**Narrator #1:** The two fourth graders had come with their Westbrook Elementary School class to help biologists in 1995 to help release almost one million baby American shad into the Potomac River.

## Students Save Shad! (Part II)

**Narrator #2:** The American shad is the largest member of the herring family of fish. Unfortunately, overfishing, pollution, and dams in the rivers have hurt the shad population. They almost disappeared.

**Narrator #1:** Julia and Nick suddenly remembered why they were at the river and scurried down to the rest of the class by the water. Their teacher, Sandi Geddes, called to them,

**Teacher:** Grab your buckets of baby shad and carry them carefully down to the river. Mr. Jim Cummins, the biologist, is going to help us understand what to do.

**Narrator #2:** Mr. Cummins, a fish biologist, had begun a program of releasing hatchery-raised American shad above Little Falls Dam. Little Falls Dam was built above Washington D.C. to help bring water to the city, but it blocked the shad from returning to their spawning grounds.

**Narrator #1:** Julia and Nick grabbed their buckets of baby shad and headed toward the water. The fish were about half an inch long and wiggly.

**Nick:** They look like insects.

**Julia:** I know. But, I think they ate too much sugar because they can't be still.

**Nick:** I don't think they eat sugar. But, they sure are busy.

**Julia:** You can say that again.

**Nick:** They sure are busy.

**Narrator #2:** The teacher interrupted everyone's excitement.

**Teacher:** Okay, class. I'm setting my bucket of baby fish down. All of you set your buckets down gently while Mr. Cummins explains things to us.

**Mr. Cummins:** Thank you. As you probably all know in the spring the shad used to swim up past Washington D.C. to this part of the river. Early references describe these shad migrations as a mass of molten silver flowing up the river. Do you remember what stopped them?

**Class:** The Little Falls Dam!

**Mr. Cummins:** Correct! Well, the good news is people are working on cutting a notch in the dam to create a fishway--like a fish freeway--for the fish to find their way back home. Some of your fish will be the first to use the new fishway freeway.

## Students Save Shad! (Part II)

**Class:** *(cheers)* Yea!

**Mr. Cummins:** Next year you can raise your own American shad in school and release them here. Then, like these babies, your fish will swim from this beach down the Potomac River, through the Chesapeake Bay, and into the Atlantic Ocean. In three to six years the fish that survive will miraculously come back here to spawn--after using the new fishway.

**Class:** *(cheers)* Yea!

**Mr. Cummins:** Ready, now?

**Class:** *(cheers)* READY!

**Mr. Cummins:** Okay. Carry your buckets to the river and set them down gently. Then, each of you can dip a cup into a bucket to get your baby shad fry to release. Be careful so you don't spill them. We'll release them after we're all lined up along the river.

**Class:** *(cheers)* Hooray!

**Narrator #1:** The students and their teacher found places along the Potomac River beach. Students dipped cups of fish out of the buckets and lined up along the riverbank.

**Teacher:** Five, four, three, two, one!

**Narrator #2:** Cups began to dip into the cool, flowing river water releasing tiny swarms of insect-like baby fish.

**Class:** Bye, shad! Come back!

**Mr. Cummins:** You won't see the river running silver now, but come back in a few years and hopefully we'll have an American shad celebration when they return. If we keep collecting shad eggs every spring and raising the babies successfully you should see the river run silver again with BIG shad.

**Class:** *(cheer)* Yea!

**Teacher:** All done? Great! Let's share our American shad cheer with Mr. Cummins...

## Students Save Shad! (Part II)

**Class & Teacher:** (*cheers*) Clean the river, save the stream,  
Rescue our waterways. Yea, shad!

(*louder*) Clean the river, save the stream,  
Rescue our waterways. Yea, shad!

(*louder*) Clean the river, save the stream,  
Rescue our waterways. Yea, shad!

**Narrator #2:** That's the end of Part II of the Great Shad Adventure, but it's NOT the end of the story. Stay tuned for Part III and the REST of the story.

**Announcer #2:** Clean the river, save the stream,  
Rescue our waterways. Yea, shad!

That video makes me want to know MORE about shad. Those were itsy-bitsy, teeny-weeny fish as small as jelly beanies--or smaller. What do their eggs look like? I STILL don't know.

**Announcer #1:** What do you think shad eggs look like?

**Announcer #2:** Maybe like itsy-bitsy, teeny-weeny blobs as small as jelly beanies?  
Am I right?

**Announcer #1:** We'll see. Tune in tomorrow for Part III of this week's top story  
"Students Save Shad."

**Announcer #2:** Wait a minute. What happened to the "Great Shad Adventure"?

**Announcer #1:** You'll hear more about it tomorrow.

**Announcer #2:** Okay. Meanwhile I'll practice:  
Clean the river, save the stream,  
Rescue our waterways. Yea, shad!

**Announcer #1:** This is Kids' World News. Good day!

\* [Let the River Run Silver Again](#) by Sandy Burk tells the story of the first elementary school in the nation that helped in the restoration effort of the American shad in the Potomac River by Washington D.C.

## Students Save Shad! (Part II)

### Background Information:

In the late 1800s eggs from shad were collected and placed in “hatching” jars. Workers put the jars on a train in special fish cars with stands to hold the jars. When the train left Washington D.C., the shad eggs would hatch on the way. The young shad can live off of its egg sac for several days. When the train arrived in San Francisco, California, the shad were ready to be released into local rivers, like the Sacramento River. Thousands of baby shad were released into the Sacramento River between 1888-1889. Since then shad have multiplied in the Pacific Northwest.

### Science Information:

Shad food chain =

shad lay eggs

Algae= producer

Brine shrimp= first order consumer. shad fry feed off their yolk sac until released.

Hatcheries feed shad plankton like brine shrimp until fry are released.

Shad fry= second order consumer

Sunfish = third order consumer

**anadromous fish** = spend most of their adult lives at sea, but come from about every river along the Atlantic (and now Pacific) coast.

Schools from other rivers along the Mid-Atlantic region from NC to NJ have raised shad.

Eagle cams show eagles feeding young. Young need to feed about every 2 hours until they fledge and their primary food is fish--including shad and other herrings for coastal eagles.

NCTC eagle cam: [www.fws.gov/nctc/cam](http://www.fws.gov/nctc/cam)

Follow the links to the live feed:

<http://outdoorchannel.com/Conservation/EagleCam.aspx>

I saw two baby eagles, one sleeping and one preening and stretching. Looks like he was getting ready to take off, but didn't know how yet! :)

“Be an eagle biologist for a day.”

Schools in Schools program for shad restoration:

[www.livingclassroomsdc.org/shadrestoration.htm](http://www.livingclassroomsdc.org/shadrestoration.htm)

Living Classrooms is a non-profit with the motto Learning By Doing.” They have worked with more than 85 schools in the DC area to raise shad in the classroom each spring.

The latest press release here is about the 2009 program.

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### Curriculum Links (Valid in 2012):

[http://www.growingnative.org/pcgn\\_gncurr.html](http://www.growingnative.org/pcgn_gncurr.html)

Click on Educational Resources, Growing Native Curriculum (related to the Potomac River watershed). In Section 3, lesson 3.3 you'll find student page 3.3.5 for printable activity flash cards about the food web in the Potomac River.

[www.potomacriver.org/cms/wildlifedocs/shad4teachers.pdf](http://www.potomacriver.org/cms/wildlifedocs/shad4teachers.pdf)

2011 Potomac River.org's excellent PDF on the restoration project. There's something for everyone here. It looks like these were slides to a PowerPoint presentation. LOTS of great photos, including historic photos and photos of big shad. Plenty of educational information for every level (e.g., graphs of different difficulties for both younger and older students). No lesson plans. No questions. A bit technical at the end.

[www.potomacriver.org/2012/.../CumminsShadSchools2012.pdf](http://www.potomacriver.org/2012/.../CumminsShadSchools2012.pdf)

2012 Potomac River.org's excellent PDF on the restoration project from the local hero of saving the river, Jim Cummins. This is almost identical to the presentation above, but I LIKE IT BETTER FOR TEACHERS and students. It is more to the point for teachers, with LOTS of great photos, including historic photos and photos of big shad. Plenty of educational information for every level (e.g., graphs of different difficulties for both younger and older students). No lesson plans. No questions.

[http://www.fws.gov/raleigh/sis\\_resources\\_articles\\_papers\\_journals.html](http://www.fws.gov/raleigh/sis_resources_articles_papers_journals.html)

U.S. Fish & Wildlife Service page of links on "Shad in Schools--Articles, Reports, Journals, Profiles." The third one in the list "Shad Tank Food Web" includes a nice photo montage done by a student of the food web showing producers and consumers clearly on one page. The next one is a nice picture of the "Life Cycle of a Shad" handwritten in italic font. Many of these articles are on NC shad info, so I didn't read them.

[http://www.fws.gov/raleigh/sis\\_resources.html](http://www.fws.gov/raleigh/sis_resources.html)

"Shad in Schools--Resources" First article, "Just Keep Swimming," is an article on the first shad students in North Carolina by Patty Matteson, USFWS Raleigh Field Office. I used this detailed article to glean lots of information and ideas for student comments.

**2nd article:** "Fish Farming" is the newspaper article from NC where they adopted the program done in DC.

**3rd Article:** "Helping the Bay's Rivers Run Silver Again," by Karl Blankenship from the Chesapeake Bay Alliance's Bay Journal.

**4th article:** River of Hope by Sandy Burk, USFWS Journal, focuses on VA, but has some interesting bald eagle info and great classroom photo showing a classroom shad hatching tank.

**5th link** starts with The Shad Foundation's Shad Journal, from Feb. 1997 and includes an article entitled "One Night with Shad" by elementary students, an article called "Oceanography of The Pacific Shad Invasion" in 1871, and an article called "The Shad

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Project” written by one of the first students to participate in the shad restoration pilot program with schools.

<http://www.fws.gov/chesapeakebay/SHAD.HTM>

Chesapeake Bay Field Office page on American Shad. Lots of information, but no pictures. Shares briefly about George Washington’s troops being saved from starvation at Valley Forge because of dried shad.

<http://gwpapers.virginia.edu/articles/boyle.html>

“The Valley Forge Fish Story” from the Shad Foundation’s Shad Journal. Information re: historical primary sources for this “fish story.”

<http://www.dnr.state.md.us/fisheries/fishfacts/americanshad.asp>

Department of Natural Resources page on the American Shad filled with bullet points and a big profile picture.

<http://www.flickr.com/photos/jayparedes/page3/>

Second row of photos, far right, shows an osprey carrying a partially eaten American Shad “back to its nestlings.”

<http://www.dgif.virginia.gov/fishing/shad-restoration/>

Virginia’s Department of Game and Inland Fisheries page “On the Road to Recovery: American Shad Restoration.” Includes info from 2011 and a link to the “Shad Tagging Study.”

<http://www.dnr.state.md.us/fisheries/recreational/hatchery/shadrestoration.html>

Maryland’s Department of Natural Resources Fisheries page on “Shad Restoration.” Lovely photos, plus a You Tube video from a biologist about collecting hickory shad for the hatchery. (4:12) Links to shad identification sheets at the bottom of the page.

[http://www.fish.state.pa.us/education/shad\\_inpa.htm](http://www.fish.state.pa.us/education/shad_inpa.htm)

Pennsylvania’s page on “American Shad in Pennsylvania.” **Includes link to lesson plan PDFs for grades 3-8:**

“Where Have All The Shad Gone” (Data or Activity)

“Shad Scents” (Activity)

“Dam Design”

“Hooks & Lifts”

“American Shad Restoration Overview”

“Publication and Background Information”

[http://fishandboat.com/shad\\_schu.htm](http://fishandboat.com/shad_schu.htm)

Pennsylvania’s Fish and Boat Commission’s page on “Schuylkill River American Shad” restoration showing a map of 4 fishways.

[http://www.crwa.org/projects/shad\\_stocking.html](http://www.crwa.org/projects/shad_stocking.html)

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Massachusetts' Charles River Watershed Association page on their American Shad Restoration Project with 2011 information and photos. (Small print.)

### You Tube:

<http://www.youtube.com/watch?v=cdCT7CoJS9Y>

"Seining with Chris Nack for the Sad Restoration Project" for the American shad in the Hudson river. He talks about several fish predators. Not super engaging video, but several still shots mixed in the video. 2:49

<http://www.youtube.com/watch?v=tmLF-MD5OVY>

Here's a photo slide show with video of students and the Anacostia Watershed Society Education Team from 2010. **Great MOVING video of the shad babies and the students releasing the baby shad fry. Shows the babies from the view of a microscope.** Mostly instrumental background. Well done! 2:43

<http://www.youtube.com/watch?v=tc50aH5QQQY>

"Returning the Silver: American Shad," an **inspirational documentary** about the restoration of the American Shad to the Potomac River. Amazing video of Great Falls. Shows **Jim Cummins (biologist in our script)**, Native Americans, local watermen, student helpers, **Sandy Burk (author of Let the River Run Silver Again)**, explanation by students of the classroom tank set-up and the process, live photos of catching shad, hatching shad babies, explanation of ammonia levels, shadbush and other plantings, student release of fish, story of student lobbying for fishway ladder through the dam, shad egg sharing, wildlife (including bald eagle and osprey), eagle cam pictures of baby eagles, and **the positive impact that students can have on the world.** Excellent! (Audio a little variable, but that's minor.) This video matches the scripts perfectly. 23:40

<http://www.youtube.com/watch?v=rPO0bDsUeVc>

"Shad Migrating Up the Susquehanna River. Holtwood Dam. 2009" Shows the "fish lift" for the fish working. Note: A fish lift is kind of like an elevator filled with water and fish that they dump over the hydro-electric dam. Odd banjo song in the background that mentions dousing in the story of wanting silver to be rich. Video done at 5 minutes basically, but it goes to 6:12 for the song.