

Students Save Shad! (Part I)
Carol Montgomery

Performance Time = about 5 1/2 minutes

Readability = grade 4.1 (grade 3.5 without the words “announcer” or “narrator”)

Cast (6-21+):

Announcer #1	Student #8
Announcer #2	Student #9
Narrator	Student #10
Teacher	Student #11
Student #1	Student #12
Student #2	Student #13
Student #3	Student #14
Student #4	Student #15
Student #5	Student #16
Student #6	Student #17
Student #7	(NOTE: For fewer readers assign more parts per reader.)

Vocabulary:

announcer	historically	Atlantic Ocean
shad	popular	Pacific Ocean
adventure	Valley Forge	plankton
Potomac River	starvation	excellent
Washington D.C.	important	minnows
American	remember	osprey
delicious	animals	planks
president	spawn	nutritious
rescue	migrate	waterways
tomorrow		

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

Announcer #2: Poor Shad. What happened to him that the kids had to save him?

Announcer #1: No one had to save HIM. Shad is a kind of fish.

Announcer #2: What? A bunch of students had to save one fish name Shad?

Announcer #1: No, no, no. A lot of students from a lot of schools have saved a lot of fish called shad.

Announcer #2: Oh, I see. There's a lot of fish named Shad and a whole bunch of schools get together to save all the fish named Shad. Weird.

Announcer #1: Let's get on with our story and you'll learn all about the American shad.

Announcer #2: Ah... Shad is an American. Where's he live?

Announcer #1: Shad is the name of a kind of American fish. Students helped rescue the fish in "The Great Shad Adventure."

Announcer #2: I love adventures. Tell me more.

Announcer #1: I have a better idea. Let's play the first video. That tells the whole shad story.

Announcer #2: I don't like sad stories. I thought you said this was an adventure.

Announcer #1: It is. And, it's a SHAD story with a very happy ending.

Announcer #2: What are we waiting for, then? Let's roll the video!

Announcer #1: Okay, here comes the narrator!

Narrator #1: This video series is based on a true story about students who lived near the Potomac River that runs through Washington D.C. Let's join them in Part I as their class shares a little about the American shad. Here's their teacher...

Teacher: Many years ago, when the Native Americans lived in this area all the rivers were clean and healthy. A man could go out and catch delicious fish to help feed his family. In the Potomac River one of the historically popular fish to catch is called...

Class: The American shad.

Teacher: Right! Our first president, George Washington, was the most famous American shad fisherman in this area. In fact, his troops at Valley Forge were saved from starvation because of dried...

Class: American shad!

Teacher: Right again! American shad has been an important food--for people and for animals. What do you remember about the American shad?

Student #1: The American shad is a big, silvery fish with a row of dark spots on its side.

Student #2: They hatch in a river, swim to the ocean, then come back to the exact same river years later to spawn in the spring.

Student #3: If they live long enough, like five years, they can migrate more than 12,000 miles--in the Atlantic or Pacific Oceans and then swim to lay eggs up rivers.

Student #4: They eat plankton, insects, and sometimes other fish when they're bigger.

Teacher: Excellent! But, who eats the American shad?

Student #5: Minnows eat the shad eggs and babies in the rivers.

Student #6: Catfish and bass eat the little ones in the rivers.

Student #7: In the ocean, big fish like tuna eat them. Plus, sharks and dolphins eat shad.

Student #8: Seals and sea lions also like to eat shad in the ocean.

Student #9: Bald eagles and osprey eat the shad when the big fish come back to their own fresh-water rivers to lay eggs.

Student #10: I eat shad! The fish were nailed to planks standing next to a fire to cook it; I mean smoke it. It was delicious fishes!

Class: (laughs)

Teacher: Delicious fishes are nutritious.

Class: *(laughs)*

Teacher: Remember, the shad hatch in freshwater rivers and years later go back to the same place they hatched to lay their eggs. Let's share our American shad story about these delicious fishes, so our video audience can learn WHY we almost lost the American shad...

Student #11: Shad needed a safe place to lay their eggs...
so they'd hatch, so they'd hatch, so they'd hatch.

Student #12: But it had to be away from the sea...
where they'd hatched, where they'd hatched, where they'd hatched.

Student #13: Overfishing, over wishing for more shad...
took some out, took some out, took some out.

Student #14: River pollution-- not the solution...
took more out, took more out, took more out.

Student #15: An extra dam stole the place they swam...
took them out, took them out, took them out.

Student #16: When they couldn't find the place in their minds...
where they hatched, where they hatched, where they hatched...

Student #17: We stepped in to help them win,
so they'd hatch, so they'd hatch, so they'd hatch!

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

(louder) Clean the river, save the stream,
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(louder) Clean the river, save the stream,
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Narrator: This has been Part I of "The Great Shad Adventure." Join us for Part II next when we meet a couple of students who helped saved the shad.

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

That video makes me want to know MORE about shad. What do their eggs look like?
Announcer #1: What do you think shad eggs look like?

Announcer #2: Maybe a tiny orange fish-shaped cracker about the size of a penny? Am I right?

Announcer #1: We'll see. Tune in tomorrow for the Part II 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 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.

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

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

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.

Curriculum Links (Valid in 2012):

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

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

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

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

"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 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

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

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

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=tc50aH5QOQY>

“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.