Success Story Elements

Elements of Story Sections

1. **Abstract/Waterbody Improved** (one paragraph please limit to 980 characters)

2. *An overview that describes:* (1) What was the water quality problem? (2) What was done to address the problem? (3) Did the waterbody improve or was it removed from the state's 303(d) list?

3. **Problem** *(generally two paragraphs)*
A brief description of the NPS success story location and the waterbody/waterbodies to be highlighted in the NPS success story. if relevant, geographic connection with other streams/rivers. Please also include a description of the surrounding watershed. What are the primary land uses? Are there any notable landmarks (e.g., nearby cities, waterbodies) that will provide the reader with geographical context for the success story?

   **Please include citations indicating where you obtained this information*

   a. Specify the location of the waterbody, and, if relevant, geographic connection with other streams/rivers.

   b. (i) What year was the waterbody put on the 303(d) list? (ii) What beneficial use was not met? (iii) Which parameter was the cause of the listing, if known? (iv) If not identified in the listing, what pollutant(s) is believed to have been responsible for the impairment?

   c. What specific segment (and/or length) of the waterbody was listed?

   d. Describe the source(s) of the problem and specify category and subcategory (e.g., agriculture, cattle with access to streams).

   e. If desired, list any major study or water quality monitoring data that may have documented the problem. If data is available, include monitoring results that showed the water quality problem. Include a brief summary of the water quality monitoring data that informed the impairment listing of the waterbody/waterbodies. Or, if segment-specific data were not collected, explain why the segment was listed as impaired (e.g., adjacent streams in the watershed were impaired because of turbidity from logging. A visual survey was performed and this segment was listed based on best professional judgement).
   Please consider:

      - Where were the data collected?
      - When were the data collected?
      - Were there any pollutant load reductions achieved? (e.g., nitrogen, phosphorus, sediment)

   f. Was a TMDL done? If so, please provide information (e.g., the waterbody was listed for [*insert parameter here*], and the TMDL said it was necessary to meet a target of [*insert concentration or loading*] to achieve water quality standards).

   g. What is the water quality goal or water quality standard that needed to be achieved to address the problem (e.g. rolling 7-day maximum average of 64°F)?

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Example 1

Furlong Creek flows through Mackinac County in Michigan's Upper Peninsula. Surveys conducted in 1989 found diverse fish and macroinvertebrate communities in the creek. By 1999, however, cattle grazing on private property had unrestricted access to the creek. The animals walked in the creek and trampled riparian vegetation, causing excessive instream habitat disturbance and sedimentation.

Subsequent creek monitoring revealed low fish and macroinvertebrate diversity. Pollution-sensitive insect families (e.g., caddisflies, stoneflies, and mayflies) and fish species (e.g., rainbow trout) were absent or very rare. These aquatic life support impairments led Michigan to place a 4-mile segment of Furlong Creek on its 303(d) list in 1996.

Example 2:

Cobbossee Lake (short for Cobbosseecontee), a large 5238-acre lake in central Maine, is valued by people for fishing, swimming, boating, and wildlife. One of Maine's premier bass fishing lakes, Cobbossee Lake is also a secondary source of drinking water for Maine's capital—Augusta.

In the 1960s water quality in Cobbossee Lake began to deteriorate. Elevated nutrient (i.e., phosphorus) levels spurred the growth of noxious blue-green algae, which reduced water clarity, formed green surface scums, and depleted oxygen in the bottom waters of the lake. The excess phosphorus in Cobbossee Lake's watershed was caused by soil erosion and runoff from agricultural, residential, and commercial lands, and the gradual conversion of forested land into developed land. The other significant source of phosphorus came from Annabessacook Lake, immediately upstream of Cobbossee. At one time, Annabessacook received sewage discharges from the town of Winthrop, and this nutrient-rich sewage caused algae blooms. Although sewage discharges to Annabessacook Lake were eliminated by 1977, the phosphorus in the lake's sediments continued to recycle and flow into Cobbossee Lake.

The Total Maximum Daily Load (TMDL) assessment developed for Cobbossee Lake in 1995 estimated that two-thirds of the external phosphorus load came from the lake's direct 32-square-mile watershed, and one-third came from the indirect upstream watershed. Agriculture accounted for about 60 percent of the phosphorus and developed lands accounted for about 40 percent of the phosphorus load. The TMDL showed that in-lake phosphorus needed to be reduced to 15 parts per billion (ppb), or 5,904 kg P/yr, for Cobbossee to attain Maine's water quality criterion for water clarity (more than 2 meters of Secchi Disc Transparency).

4. **PROJECT HIGHLIGHTS** *(generally two paragraphs)*
A summary of the projects that were implemented that contributed to water quality improvement/restoration.

a. What major BMPs /activities addressed causes of pollution and demonstrated instream improvements?
b. Which partner(s) implemented these activities?
c. During what timeframe did the activities occur?
d. Was there a larger context of a watershed / comprehensive plan?
e. Are there ongoing or additional plans to continue improvement?

Tip: if available, please attach any photographs that help describe project implementation (e.g., before/after photos; photos of BMPs)

Example 1:

In August 2001 EPA approved a TMDL for siltation that called for a 50 percent reduction in sediment delivery to the lake. To accomplish this goal, the Decatur County Conservation Board and the Decatur Soil and Water Conservation District proposed the construction of two large basins to slow sediment delivery originating from gully erosion. The Iowa Department of Natural Resources' (IDNR) Nonpoint Source Pollution Program provided further suggestions to address the problem using a watershed approach. As a result, the plan was expanded to include seven smaller sediment basins throughout the watershed. To further stabilize the shoreline of Slip Bluff Lake, the Iowa Department of Transportation and the Iowa Department of Agriculture and Land Stewardship, Division of Soil Conservation (IDALS-DSC), provided funds to riprap portions of the shoreline.

To ensure the continued success of this project, the Decatur County Conservation Board maintained the project by planting additional seedings in exposed soil on the constructed sediment basins.

Example 2:

An educational effort on reducing fertilizer and chemical usage targeted landowners and highlighted the benefits of potential cost savings. One-on-one meetings and public sessions were held to teach peanut and alfalfa growers integrated pest management techniques including proper weed and insect scouting, determining pest thresholds, interpreting soil test reports and proper fungicide use. Demonstration BMPs illustrated techniques to manage vegetation; exclude cattle from riparian zones; and reduce nutrient, pesticide, and sediment loading. BMPs implemented from 1995 to 2002 included reduced tillage planting in peanut fields, riparian fencing, alternative livestock water source construction, grade stabilization structures, diversion terraces, deferred grazing, rotational grazing, and revegetation in riparian zones.

5. **Partners and Funding**

A listing of the major project partners/funding sources that contributed to the NPS success.

a. List specific partners who contributed to the improvements in the waterbody.

b. List specific amounts of section 319 dollars dedicated to the project (mention total amount over the lifetime of the project).

c. What did the section 319 dollars support?

d. If section 319 grant money was not used for the project, please describe the involvement in this project by any staff member who works in the states' nonpoint source program, if applicable. Additionally, was the project patterned after any other projects that have been funded by section 319? The objective here is to try and link 319 program elements to the success of the project.

e. Identify other matching sources of funding (e.g., state agricultural funds, USDA/EQIP, SRF, and local/private if such information is available).

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f. Please provide GRTS numbers (9 digit grant number) if applicable. GRTS numbers are for internal tracking purposes only and will not be included in the story.

Example 1:

> The cooperation of 28 members of the LVWCC, representing local, state, and federal agencies, local environmental groups, businesses, and interested citizens, was essential in the creation of a comprehensive management plan for the Las Vegas Wash. Volunteers also played an important role in the project, providing the needed labor for wetland and riparian plantings and invasive vegetation removal. The overall cost to implement the CAMP is projected to be approximately $127 million through 2013.
>
> As of 2006, $33 million has been spent on CAMP implementation. Approximately $600,000 of section 319 funds was used to support construction of erosion control structures, bank revegetation, and public outreach efforts. Participating agencies contributed $1.8 million during the 2005–2006 fiscal year.

Example 2:

> Partners involved in the effort were North Carolina Division of Water Quality, Soil and Water Conservation Districts, North Carolina Division of Soil and Water Conservation, North Carolina Cooperative Extension, U.S. Department of Agriculture's Natural Resources Conservation Service, North Carolina Department of Agriculture, North Carolina Farm Bureau, North Carolina State University, and agricultural community and commodity groups. The North Carolina Environment Management Commission brought together stakeholder groups of affected parties and provided the participants with a chance to express differing viewpoints. Stakeholders involved in the process included environmental groups, municipalities, developers, businesses, and the public. The North Carolina Agriculture Cost Share Program, administered by the Division of Soil and Water Conservation (DSWC), contributed $12.5 million between 1992 and 2003. Another DSWC-administered program, the federal Conservation Reserve Enhancement Program, has obligated approximately $33.1 million in the Tar-Pamlico River Basin since 1998. Between 1995 and 2003, approximately $2.67 million in Clean Water Act section 319 expenditures supported a variety of nonpoint source projects in the Tar-Pamlico Basin, including BMP demonstration and implementation, technical assistance and education, GIS mapping, development and dissemination of accounting tools, and monitoring. As part of the Phase I Agreement, the area's Point Source Association both contributed funds and acquired a section 104(b)(3) grant for agricultural BMP implementation. The combined total of their contributions was $850,000 in nutrient-reducing BMPs in the basin.

6. **Results**

a. What water quality goals were achieved?

Include a brief summary of the water quality monitoring data that demonstrates water quality improvement/restoration of the previously impaired waterbody/waterbodies. Please consider:

- Where were the data collected?
- When were the data collected?
- Were there any pollutant load reductions achieved? (e.g., nitrogen, phosphorus, sediment)

Tip: If available, when submitting your NPS success story please also include any monitoring data tables or graphs that will help summarize pre- and post-project water quality monitoring data

b. Did the waterbody improve or was it removed from the state's 303(d) list? If so, which year was it delisted, or when does the state expect to delist the waterbody?

Note: *EPA may count this waterbody as being "partially or fully restored" for Strategic Plan purposes (Category 1 story) even if the waterbody has not officially been removed from the 303(d) list, as long as the story demonstrates that actual restoration has occurred and the state has nominated that the waterbody be delisted in the next 303(d) cycle. It is not sufficient to merely believe by the next 303(d) list cycle, that restoration will have occurred.*

c. Were there load reductions in other pollutants that indicate progress?

d. Were any new ordinances or laws put into place as a result of the actions?

Tip: URL link/attachment with more information If available, it can be helpful to provide a data source (e.g., URL link) or attachment where EPA can obtain more information about the monitoring data used to list/delist the waterbody.

Example 1:

By 2003 biological integrity and habitat at Blue Spring Creek had improved, as measured by the higher diversity and types of macroinvertebrates such as insects, crayfish, snails, and clams—indicators of good water quality. Almost twice as many EPT families (a category of insects used to measure water quality) were present in 2003 (11 EPT) than in 1999 (6 EPT), and 25 different taxa were collected in 2003 as compared to 15 different taxa found in 1999. Eight of these families are intolerant of pollution. These metric values represent the highest score possible (15) out of a family-level biological reconnaissance (biorecon) index that considers scores from 11 to 15 indicative of a non-impaired biological community. The habitat assessment score had improved from 114 in 1999, which is considered inadequate in the ecoregion, to a score of 136—well above the target habitat score of 123, which indicates a healthy biological population in the ecoregion. As a result, Blue Spring Creek was removed from Tennessee's 303(d) list in 2004.

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Example 2:

The Bass Lake restoration project achieved TMDL targets by reducing the average phosphorus concentrations from 490 µg/L to 10 µg/L, and the lake will be removed from the state's 303(d) list in the next listing cycle. Farmers' participation in nutrient management planning should reduce nutrient delivery from cropped areas in the watershed even further.

The alum treatment dramatically reduced total phosphorus in Bass Lake. Without the high concentration of phosphorus to feed on, heavy blue-green algae blooms no longer cover the lake and water clarity continues to improve. Secchi disk readings have improved from less than 10 feet before the project to up to 20 feet during July 2004 after the alum treatment. No fish kills have been noted since the project, and the fish population appears healthy.

Example 3:

Between March and October of both 2003 and 2005, ADEM collected dissolved oxygen data at three sites on the impaired segment of the Flint River. The agency also collected continuous dissolved oxygen data at two of the sites during July 2005.

As shown in the following table, only two monthly measurements (4.6 mg/L and 4.97 mg/L) fell below the state minimum criterion of 5.0 mg/L for the public water supply and fish and wildlife designated water use classifications. Furthermore, none of the continuous dissolved oxygen measurements were below the minimum criterion.

ADEM's assessment methodology stipulates that conventional water quality parameters, including dissolved oxygen, may not exceed water quality standards more than 10 percent of the time in waterbodies designated as public water supply and fish and wildlife resources. The data demonstrate that this 28-mile segment of the river now meets this requirement. As a result, ADEM has proposed that the segment be removed from the state's 2006 303(d) list of impaired waters. The next scheduled monitoring year for the segment is 2008.

Editorial Formatting Guidance (June 2015)

State-submitted success stories should adhere to the following editorial formatting. In cases where submittals do not adhere to these conventions EPA will make these changes when finalizing the story and will not return the revised story for state review based solely on these changes. As currently, EPA will continue to provide states with any substantive comments and edits via track changes and ask for state approval.

a. The title of the story should include the name of the waterbody. If the waterbody is not included in the title, the title will be edited.
b. Designated uses will be placed into lowercase form.
c. Numbers ≤ 10 will be written out in word form unless they are found before a unit of measurement.
d. Number > 10 will be placed into numerical form in all cases.
e. When referring to percentages, the word "percent" will replace any instance of "%".
f. "United States" should be changed to "U.S."
g. "Waterbody" should be one word.
h. There should be only one space after a period.
i. XX-mile stream segment should be hyphenated.
j. Acronyms are fine, but the full description should be provided in the first instance in all stories.
k. When "EPA" is cited, the word "the" should NOT be placed before the acronym
l. When the "303(d) list" is mentioned it should be in this format: (1) if it's the first time ot's mentioned in the story, "Clean Water Act (CWA) section 303(d) list of impaired waters" or, (2) if it's not the first time it's mentioned in the story, "CWA section 303(d) list of impaired waters".
m. *The phrase "is located in" should be replaced with "is in"*

    Incorrect: The Blue watershed is located in Rainbow County.

    Correct: the Blue watershed in Rainbow County.

n. How to refer to removal from the CWA 303(d) list
i. When a TMDL exists and the impaired segment is restored, say, "… removed the segment from the impaired waters list."
ii. When there is no TMDL and the impaired segment is restored, say, "removed the segment from the CWA section 3039(d) list."

EPA encourages submittal of maps, graphs, and images (before and after). For clarity in documentation, states should include the following information. EPA will request the following if not provided.

o. Any maps submitted with a story write-up must include at a minimum: a key, a scale, and a north arrow.
p. Any images submitted should have a resolution of at least 300 dpi. Typically, a .jpg file with a file size of 300 kb or greater is of a sufficient quality, reminder that images should be no wider than 475 pixels in width for proper formatting of the page.
q. Any test or assessment methods included in the write-up should include a one-sentence explanation.
EPA strongly suggests that states use the "active voice". However, EPA will not make these changes if a state submittal doesn't use the "active voice".
r. Success Stories should be written in active voice" over "passive voice". Below are a few examples of "passive" vs. "active" voice.

Example 1 (Passive): As a result, these two waterbodies were added to [insert state name]'s Clean Water Act (CWA) section 303(d) list of impaired water bodies in 2002 for sediment and non-volatile suspended solids (NVSS).

Example 1 (Active): As a result, the [insert state organization name] added these two waterbodies to the state's Clean Water Act (CWA) section 303(d) list of impaired water bodies in 2002 for sediment and non-volatile suspended solids (NVSS).

Example 2 (Passive): Prescribed grazing was implemented on 1.700 acres and nutrient management plans were adapted for 150 acres.

Example 2 (Active): Landowners implemented prescribed grazing on 1.700 acres and adopted nutrient management plans for 150 acres

Graphics and Images Guidance

1. Specifications for Graphics

Photos:

Provide 1-2 photos of BMPs that illustrate the project actions. Photos should be of a type that helps illustrate the problem and/or the solution. Please provide a brief caption that explains and provides the context of the illustration. Photos should be a maximum of 475 pixels in width. For how to resize images go to:

Example:

Weirs are low dams designed to reduce streambed erosion by flattening the slope of the channel and slowing flows. Many weirs are constructed of confined rock riprap, providing a somewhat natural look (left). Other structures are built with concrete, resulting in a more engineered look (right). Weirs, wetland restoration, and invasive vegetation removal helped reduce total suspended solids (TSS) concentrations in lower Las Vegas Wash and led to its removal from the Nevada 303(d) list in 2004.

Tables/graphs/charts: If data is provided that documents improvements in water quality, please label axes, indicate water quality target/endpoints, and provide brief caption that explains the data. Please attach graphs as separate files, if possible.

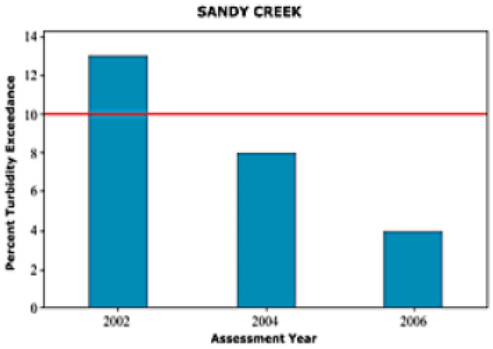
Example 1:

Chase Brook Biomonitoring Results

Sampling site	Date	Assessment rating	EPT	Density (individuals/m^2)	Individuals from Oligochaeta (%)
1.2	9/14/1993	Fair	**15.0**	357	10.6
1.2	9/20/1994	Fair	22.5	584	**23.8**
1.2	10/6/1998	Fair	19.0	493	11.7
1.2	9/18/2000	Very good	19.0	673	2.4
1.2	9/2/2002	Good	16.7	1253	1.4
		Class B Guideline	> 16.0*	> 300	< 12.0

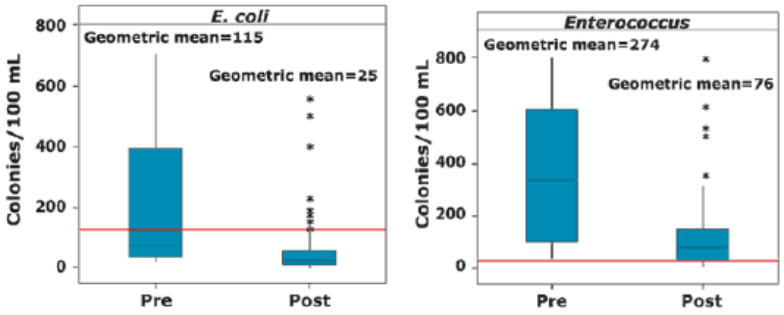
* Vermont Class B Guideline for EPT was 18.0 until the state changed it to 16.0 in 2002.

Example 2:



A stream is considered impaired due to turbidity if 10 percent or more of the seasonal base flow water samples exceed 50 NTUs (based on five years of data proceeding the assessment year). The FWP designation is now fully attained.

Example 3:



Boxplots indicate the interquartile range (25th-75th percentile) and median of the data in each of two periods: "Pre" contains data from August 1999 to January 2001; "Post" includes data from July 2001 to May 2005. The red line indicates the geometric mean above which the beneficial use is not achieved. There were significant reductions in mean levels of both *E. coli* and *Enterococcus* bacteria.

Maps

Assure that a legend is legible when the map is displayed at 475 pixel width (approx. 3 inches wide)

Example

Graphics and Images

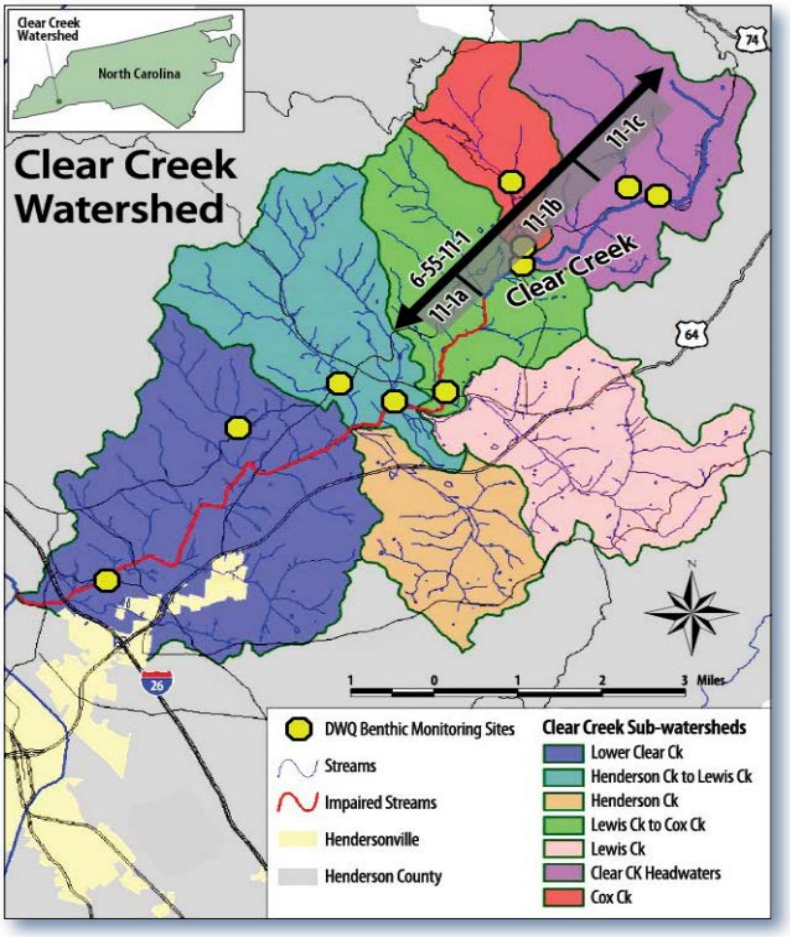
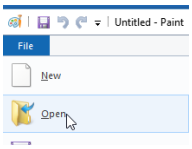


Figure 1. Clear Creek sub-watersheds, monitoring stations, impaired waters and waterbody segmentation.

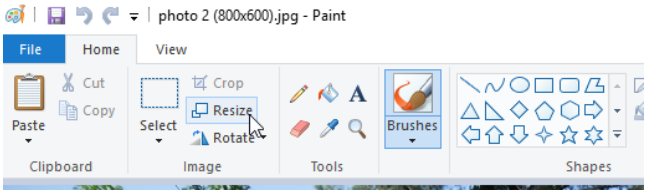
Resizing Graphics

There are several options for resizing images. We will offer one of the simplest using standard MS office software, Microsoft Paint.



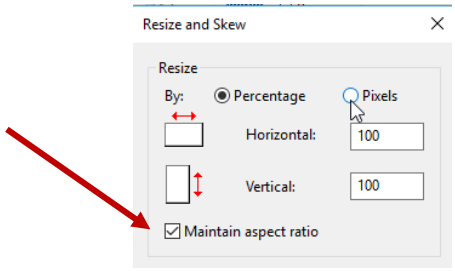
From Microsoft Pain open the image you want to resize:

Select Resize



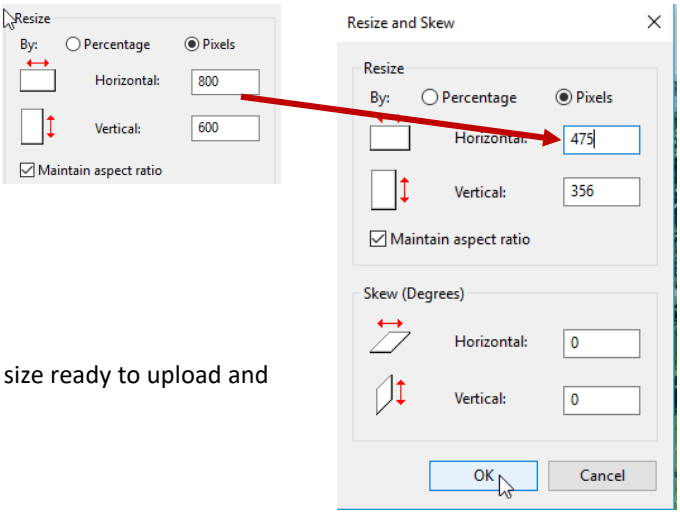
Then select Pixels

Keep the maintain aspect ratio box checked



Next type the proper horizontal width (Max 475),

and select OK



Save the image file. You now have an image of the proper size ready to upload and include in the success story.