Format and Content for Section 319 Success Stories

June 21, 2007

Outline of NPS Success Story with Examples

Each story should run 1-2 pages in length, addressing all of the information identified in each category below to the extent possible (aim for a maximum of 950 words). The story should provide a clear, succinct summary in plain language so that the general public will be able to understand. Use a non-technical, plain language description or definition (or photo) that demonstrates the meaning. Please note that all examples below are excerpted from published Success Stories.

I. TITLE

(1) Create a brief title that uses a verb.

Example:

Stream Restoration Efforts Reduce Impacts of Acid Mine Drainage

II. WATERBODY IMPROVED *(one paragraph)*

(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?

Example:

The North Fork of the South Branch of the Potomac River is a scenic trout stream in the headwaters of the Potomac River in northeastern West Virginia. Water in the North Fork had high levels of fecal coliform bacteria, primarily from agricultural runoff from beef and poultry farms. Over 85 percent of farmers in the watershed worked together to construct animal waste storage facilities, establish riparian buffers, and implement a range of other best management practices (BMPs) at the farms. As a result, the stream now meets its designated use and is no longer impaired by fecal coliform bacteria.

III. PROBLEM *(generally two paragraphs)*

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

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

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

(4) Describe the source(s) of the problem and specify category and subcategory (e.g., agriculture, cattle with access to streams).
(5) If desired, list any major study that may have documented the problem. If data is available, include monitoring results that showed the water quality problem.
(6) 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).
(7) 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)?

<u>*Example 1:*</u>

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).

Example 2:

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.

IV. PROJECT HIGHLIGHTS *(generally two paragraphs)*

(1) What major BMPs /activities addressed causes of pollution and demonstrated instream improvements?

(2) Who were major partners in the effort?

(3) During what timeframe did the activities occur?

(4) Was there a larger context of a watershed / comprehensive plan?

(5) Are there ongoing plans to continue improvement?

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.

V. RESULTS

(1) What water quality goals were achieved?

(2) Was the waterbody delisted? 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.*

(3) Were there load reductions in other pollutants that indicate progress?

(4) Were any new ordinances or laws put into place as a result of the actions?

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.

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.

Example 4:

The accompanying table compares key Whetstone Brook biomonitoring results with Class B water guidelines. Data highlighted in bold indicate the waterbody's failure to meet aquatic life support biocriteria for Vermont Class B waters. These data led to Whetstone Brook being added to Vermont's 303(d) list in 1998.

The monitoring team reassessed the segment in 2002 and found significant biological improvement. However, before 2004 (when Vermont revised its listing methodology for impaired waters), a waterbody could not be removed from the state's impaired list until 2 years of biological monitoring data showed compliance with water quality standards. Such compliance was confirmed in 2003. The EPT richness, BI values, and other biological indicators for both years remained well within the Class B guideline. In addition, the team found no evidence of oil sheens either year.

Because of these findings, VT DEC concluded that oil/grease no longer impaired Whetstone Brook's aesthetic and aquatic life uses. As a result, Vermont removed the waterbody from its 303(d) list in 2004. Whetstone Brook is scheduled to be monitored again in 2008.

VI. PARTNERS and FUNDING

(1) List specific partners who contributed to the improvements in the waterbody.

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

(3) What did the section 319 dollars support?

(4) 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.

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

(6) 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. If the Region or State is unable to provide this information, HQ will attempt to match up project with GRTS numbers. In this case, please provide project name.

(7) BONUS question: What Congressional District does the waterbody reside in? This is for the purposes of tailored mailings to congressional members, which are frequently requested by Office of Water management or by the Office of Congressional and International Relations (OCIR). If the state cannot provide this information, Headquarters staff will attempt to determine the District number.

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.

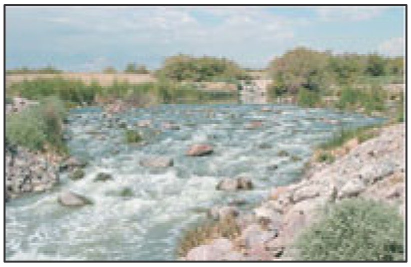
Example 2:

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.

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 300 dpi resolution when printed at 3" X 3". Occasionally, the contractor can utilize photos with less resolution, but if that is not possible, the story will have to be published without a photo.

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.

Table/Graph/Chart:

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.

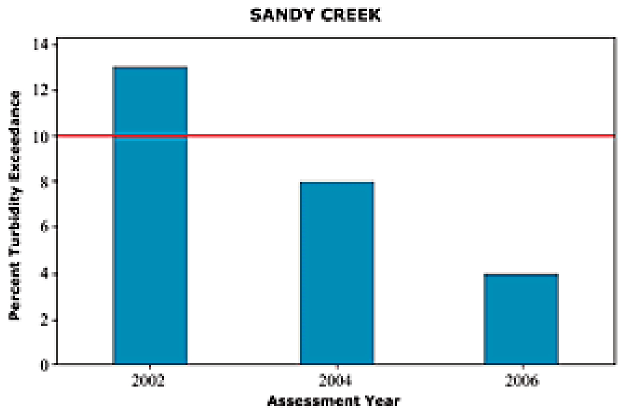
Example 1:

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

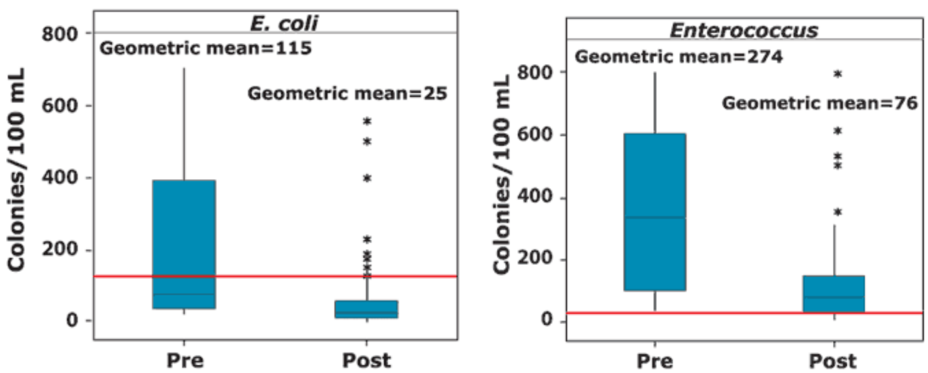
* Vermont Class B Guideline for EPT was 18.0 until the state changed it to 16.0 in 2002.

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.

CONTACT INFORMATION:
Provide a contact name, agency, phone, e-mail address. Use your discretion on including a Regional, State, and/or local project contact(s).

Example:

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Doe.Jane@xxxxx.xxx