

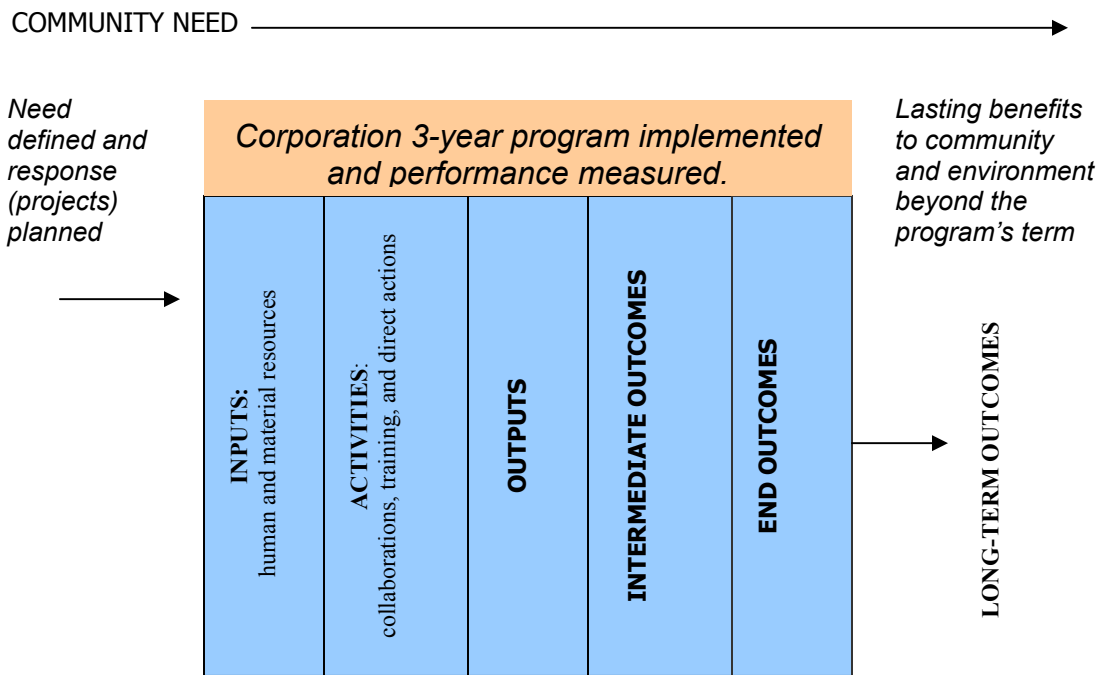
Corporation for National and Community Service Environmental Programs

WATERSHED RESTORATION AND MANAGEMENT

Performance Measurement

Corporation programs (AmeriCorps, Senior Corps, AmeriCorps*VISTA, Learn and Serve America) implementing environmental projects face challenges in identifying outputs and outcomes that can be measured annually, and sometimes even within the three-year program funding cycle. This is because generally, Corporation environmental projects contribute to a *larger mission* that is realized over a longer period of time. Below is a diagram of how the efforts of Corporation environmental projects might fit into the broader environmental picture. Following is a description of a fictional environmental program, organized into a logic model, that considers both the immediate and the eventual benefits to humans and the environment.

Figure 1. Corporation Programs' Contribution to Lasting Environmental Benefits



Watershed Restoration and Management: An Example

This document provides an example of an environmental project, watershed restoration and management, which demonstrates a "big picture" of this conservation effort, and within this big picture, what Corporation programs can contribute. This document identifies the outcomes that can be measured annually and within the program's three-year funding cycle, as well as those outcomes that are likely to occur after the three-year term.

This document consists of two sections:

1. **The Logic Model: Measurable Outputs and Outcomes** incorporates direct environmental service and public education activities. Outcomes listed on these pages could be measured within a three-year project term.
2. **Long-term Outcomes** lists outcomes that would be expected as a result of various watershed conservation activities (e.g., increased diversity of species). However, these long-term outcomes may be difficult to measure, or may not be measurable at all, within a three-year project term.



WATERSHED RESTORATION AND MANAGEMENT Logic Model: Measurable Outputs and Outcomes¹

Community Need: Decrease pollution and erosion caused by natural disasters and human activity so clean (drinking) water sources can be increased and maintained.

		Inputs	Activities	Outputs	Intermediate Outcomes	End Outcomes
		In order to carry out our set of activities, we will need the following:	In order to address our need, we will carry out the following activities:	We expect that once carried out, these activities will produce the following evidence or service delivery:	We expect that if carried out, these activities will lead to the following intermediate changes:	We expect that if carried out, these activities will lead to the following end changes:
Direct Environmental Service	Restoration	<p><u>HUMAN RESOURCES:</u> X number of members/ volunteers/ participants assigned to restoration activities. Community volunteers. Trainers to teach members/ volunteers/ participants safety and planting procedures.</p>	<p><u>COLLABORATIONS:</u> Collaborate with government agency or environmental steward/organization to determine areas to be restored and to what degree. Coordinate with city departments for removal of woody debris. Get permission from property owners or government agency, if applicable.</p>	<p>Agreements from local city/county departments for debris removal, if possible. Documents from property owners or government agency, if applicable.</p>		
		<p><u>MATERIAL RESOURCES:</u> Planting materials including tools, trees, shrubs, etc. Proper clothing and other gear, boots, gloves, raincoats, visibility vests etc. First aid kits and insect repellent.</p>	<p><u>TRAINING:</u> Train community volunteers in safety and planting procedures.</p> <p><u>ACTIONS:</u> Identify watershed area (define physical boundaries) to be restored. Plant trees, shrubs, and other appropriate vegetation in bank areas at risk for erosion.</p>	<p>Number of community volunteers signed up and trained for activities.</p> <p>Miles or acres of watershed area restored, including number of plants, trees, and other new bank vegetation added.</p> <p><u>Instruments</u> <i>Permission Form Agreement Form Volunteer Sign-up Sheet Checklist/Record of Vegetation</i></p>	<p>Waterway banks begin to stabilize (new vegetation flourishing).</p> <p><u>Instruments</u> <i>Watershed Observation Checklist</i></p>	<p>Upgraded classification or designation/ of watershed area by government agency or environmental steward/organization.</p> <p>Continued increase in stabilization of banks as vegetation flourishes.</p> <p><u>Instruments</u> <i>Watershed Observation Checklist Certification or classification document</i></p>

¹ For illustrative purposes, this example provides examples of various activities. However, it is not meant to suggest that a project should attempt all these activities.

	Maintenance	<p><u>HUMAN RESOURCES:</u> X number of members/ volunteers/ participants assigned to maintenance and clean-up activities. Community volunteers. Trainers to teach members/ volunteers/ participants safety procedures.</p> <p><u>MATERIAL RESOURCES:</u> Cleanup materials such as: rakes, shovels, pitchforks, tongs, plastic/rubber gloves and trash bags/pails. Wading gear, boots, raincoats, visibility vests etc. First aid kits and insect repellent.</p>	<p><u>COLLABORATIONS:</u> Collaborate with government agency or environmental steward/organization to determine areas to be maintained. Coordinate with city departments to help with garbage removal. Get permission from property owners or government agency, if applicable.</p> <p><u>TRAINING:</u> Train community volunteers in safety procedures.</p> <p><u>ACTIONS:</u> Identify watershed area (define physical boundaries) to be cleaned and maintained. Organize sets of community volunteers to be responsible for maintenance of specific areas (e.g., X# square acres). Periodically clean up litter and other debris in water (if possible) and watershed area.</p>	<p>Agreements from local city/county departments for debris removal, if possible. Documents from property owners or government agency, if applicable.</p> <p>Number of community volunteers signed up and trained for activities.</p> <p>Miles of watershed area cleaned and maintained, including pounds of trash and recyclables removed.</p> <p><u>Instruments</u> <i>Permission Form</i> <i>Agreement Form</i> <i>Volunteer Sign-up Sheet</i> <i>Checklist/Record of Trash and Recyclables</i></p>	<p>Community volunteers maintain X% of the total watershed area.</p> <p>Decrease in amount of visible litter and trash.</p> <p><u>Instruments</u> <i>Watershed Observation Checklist</i></p>	<p>Upgraded classification or designation/ of watershed area by government agency or environmental steward/organization.</p> <p>Continued decrease in signs of pollution.*</p> <p><u>Instruments</u> <i>Watershed Observation Checklist</i> <i>Report of Watershed Indicators (from monitoring efforts)</i> <i>Certification or classification document</i></p>
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***Directly benefits people in the community.**

	<p>Monitoring</p>	<p><u>HUMAN RESOURCES:</u> X number of members/ volunteers/ participants assigned to monitoring activities. Trainers and/or curriculum in research procedures. Community volunteers.</p> <p><u>MATERIAL RESOURCES:</u> Appropriate clothing: wading gear, boots, raincoats, rubber gloves, etc. Biological sampling and testing materials (e.g., thermometer, containers). Visual survey materials such as maps, tape measure, binoculars, magnifying glasses, cameras, etc. Field data sheets</p>	<p><u>COLLABORATIONS:</u> Collaborate with state or county Environmental Protection Agency, Department of Natural Resources, or university-based environmental program for training and actions.</p> <p><u>TRAINING:</u> Train community volunteers in monitoring procedures.</p> <p><u>ACTIONS:</u> Identify watershed area (define physical boundaries) to be observed. Identify local plant and animal species and known threats to their survival. Develop schedule of monitoring activities taking into account seasonal changes, etc. Develop record keeping system for data collected through baseline and monitoring activities (e.g., journal of observations, field data sheets, base and field maps). Conduct baseline survey that includes: (1) visual survey and (2) review of public records (e.g., maps, news stories, photos, industrial discharge records). Monitor number and behavior of different animal species (macroinvertebrates, birds, fish, and amphibians) through visual surveys and biological sampling procedures. Test water quality periodically, including temperature, turbidity, pH level, and (if possible) bacteria, dissolved oxygen, nutrients, and toxic substances. Continue periodic visual surveys of overall watershed area.</p>	<p>Number of documented commitments from government collaborating agencies.</p> <p>Number of trained community volunteers committed to monitoring activities.</p> <p>Frequency of recording samples:</p> <ul style="list-style-type: none"> ● Type, number, behavior of animal species. ● Type and number of plant species. ● Water quality indicators. ● Observable physical changes to watershed environment for each season. <p><u>Instruments</u> <i>Log of minutes/meetings with collaborating organizations</i> <i>Field Data Sheets</i> <i>Watershed Observation Checklist</i></p>	<p>Create a record of changes to watershed environment over X period of time (i.e., a source of data for evaluating the health of the watershed and potential threats).</p> <p>Create a reporting system that can be used to (1) identify and document potential threats to the ecological balance of the watershed and (2) alert authorities to these threats.</p> <p><u>Instruments</u> <i>Field Data Summary Sheet</i></p>	<p>Through record compiled by members'/volunteers'/ participants' monitoring efforts, collaborating agencies' resources can be used to focus on enforcement and quality control measures.</p> <p><u>Sustainability*</u>: create a system (method and schedule) for future monitoring activities that can be implemented after the program ends, including a partnership between community volunteers and local enforcement agencies.</p> <p><u>Instruments</u> <i>Field Data Summary Sheet</i> <i>Volunteer Survey for Testing/Monitoring</i></p>
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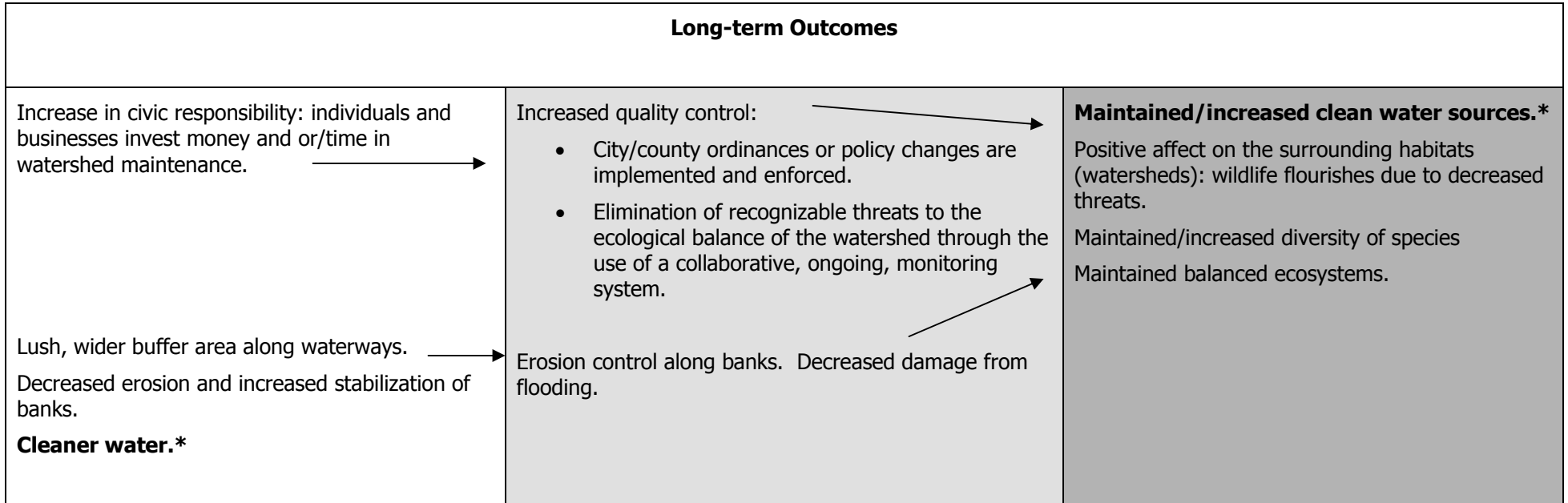
Community Need: Decrease pollution and erosion caused by natural disasters and human activity so clean (drinking) water sources can be increased and maintained.						
		Inputs	Activities	Outputs	Intermediate Outcomes	End Outcomes
Public Education and Outreach	Schools, Households and Community Events	<p><u>HUMAN RESOURCES:</u> X number of members/ volunteers/ participants assigned to education and outreach campaign. Sponsors to provide supplies, if applicable. Community volunteers.</p>	<p><u>COLLABORATIONS:</u> Collaborate with local schools, community centers, and other organizations or agencies re: what, where, who to address educational efforts.</p>	<p>Number of educational materials developed and used in presentations. Number of documented commitments from schools, agencies, and organizations where materials will be presented. Number of community volunteers trained in education and outreach work. Number and hours of meetings, fairs, and other events held at local schools, community centers, churches, parks, etc. Number of attendees at events. Number of school children participating in outdoor "hands-on" ecology activities. Number of leaflets distributed; number of blocks/residences covered.</p>	<p>(Event attendees report) Increased awareness of watershed ecology and human impact among community members/ volunteers/ participants attending events.*</p>	<p>(Residents report) Improved behaviors (e.g., less litter, dumping, and misuse of land).</p>
		<p><u>MATERIAL RESOURCES:</u> Supplies (books, presentation materials, electronic equipment, etc.). Training curriculum.</p>	<p><u>TRAINING:</u> Provide training to community volunteers re: educational materials and appropriate presentation styles for different age and interest groups.</p> <p><u>ACTIONS:</u> Develop educational materials (e.g., posters, videos) on watershed ecology, restoration, and management efforts for children and adults. Set up tables or tents at community fairs and meetings to raise awareness about local environmental concerns (e.g., trash or dumping in watershed area). Organize hands-on learning events for children in parks, community centers, churches, or schools around ecology education.</p>	<p><u>Instruments</u> <i>Log of minutes/meetings with collaborating organizations</i> <i>Presentation Schedule</i> <i>Attendance Form</i> <i>Map/List of Residences</i></p>	<p>(Teachers report) Improved understanding of watershed ecology among school children participating in hands-on activities.*</p> <p><u>Instruments</u> <i>Survey of Event Attendees</i> <i>Teacher Survey</i></p>	

*Directly benefits people in the community.

WATERSHED RESTORATION AND MANAGEMENT

Long-term Outcomes

Long-term outcomes are the effects on the environment that we would expect to see *over time* because of actions taken earlier by Corporation project teams. We would not expect to measure these outcomes because they would probably not be observable until after a three-year project term. For example, the long-term outcomes listed below (e.g., cleaner water sources) would result from a combination of actions completed during the watershed project's term (e.g., trees planted), as well as actions continuing beyond the project term (e.g., quality control measures; see pages 2-5).



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Resources: U.S. Environmental Protection Agency (www.epa.gov); Montgomery County, Maryland—Department of Environmental Protection (www.montgomerycountymd.gov/mc/services/dep); and Water Action Volunteers (<http://clean-water.uwex.edu/wav/>), a cooperative program between the University of Wisconsin—Extension and the Wisconsin Department of Natural Resources (www.dnr.state.wi.us).

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