
If you are encountering GEMS protocols for the first time, please read:

- The GEMS protocols can help you develop a monitoring plan for a restoration project. They were developed based on existing published monitoring methods, but should not be considered prescriptive or the only appropriate way to monitor.
 - Each protocol is written as if you are monitoring a single outcome, but it is very possible you will be measuring multiple outcomes and may be able to use the same or similar methods to do so. Think about ways to be strategic and efficient when combining methods from different protocols. For example, are there ways to ask questions about multiple outcomes using a single survey instrument? Or is there a way to host a workshop that asks community members about barriers to accessing multiple types of outcomes?
 - Please be aware that the “who” methods—aimed at documenting who will be affected by social and economic changes caused by a restoration project—are quite similar across protocols. Where possible and sensible, you should consolidate community engagement methods that assess stakeholder perceptions of project outcomes to avoid stakeholder fatigue.
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Background

This document provides an overview of methods available for measuring subjective well-being, which can be an indicator of mental health. Subjective well-being is an individual’s appraisal of their own happiness and satisfaction level ([American Psychological Association](#)).

The “*how much*” methods allow practitioners to measure changes in subjective well-being due to project installation. The “*who*” methods describe ways for the project to assess who has access to and is affected by changes in subjective well-being, and how access and effects are distributed among communities in the project service area¹.

The tables below list when methods would benefit from the expertise of social scientists trained in survey design and implementation, statistics, and economics. These experts should have experience with [human subject research](#), following best practices and, if relevant, conducting research in a way that is accountable to their respective institution’s oversight body, often called an [Institutional Review Board](#). If you do not have such expertise in your project or program, many university programs and consulting firms should be able to assist.

Relevant Coastal Restoration Approaches

Habitat Restoration – Oyster Reef, Salt Marsh, Seagrass, Mangrove, Beach and Dune restoration, Living Shorelines, Restoring Hydrological Connectivity

Recreational Enhancement – Boat Ramps, Fishing Piers and Fishing Piers installation

Oyster Reef Specific – Subtidal, 3-Dimensional, Intensively Harvested Oyster Reef Restoration; Subtidal, 3-Dimensional, Not Intensively Harvested Oyster Reef Restoration; Protection or Enhancement of Existing Oyster Reef, Oyster Aquaculture

Water Quality Improvement – Sewage System Improvements, Wastewater Treatment Plant Upgrades, Treatment Wetlands, Gray Infrastructure for Stormwater Management, Green Infrastructure for Stormwater Management, Outflow Treatment (Baffle Boxes), Agriculture BMPs

¹ The geographic boundary containing those stakeholders for whom a particular project outcome is relevant.

“How much” methods:

Overview. These methods help the project answer: How much has subjective well-being of project visitors changed since project installation?

This method will document the number of surveyed visitors who self-reported physical and emotional responses to their surroundings.

“How much” method:

Method (click on method title to see more detail)	Method Outcome	Method Description	Human Subject Research Expertise Needed*	Effort Level
Survey to assess perceived well-being	Proportion of surveyed visitors who indicate that their subjective well-being has changed since visiting the project site	Administer a survey that allows site visitors to self-report emotional responses to their surroundings.	Yes	High

*Refer to the [NIH Definition of Human Subjects Research](#) for more information

“How Much” Metric Summary:

Social or economic outcome this metric is linked to:	Mental Health
“How much” metric tier:	<input type="checkbox"/> 1 (easier) or <input checked="" type="checkbox"/> 2 (harder)
“How much” measurement interval:	Annually
Use this protocol if:	Your project provides access to green and blue spaces

“Who” methods:

Overview. These methods help the project answer: Who has access to the project and is experiencing changes in subjective well-being as a result of the project? Are those benefitting from changes in subjective well-being representative of the population around the site?

These methods can help restoration practitioners assess equity of mental health, specifically subjective well-being outcomes. Some of the methods suggested here can be integrated as modifications of the “how much” method described above. Others would require new methods. These methods will help identify: a) vulnerable groups and historically underrepresented stakeholders in the project service area; b) the accessibility of the site and thus its ability to provide well-being outcomes to communities in the project service area; and c) whether groups who are interested in visiting the site specifically for well-being reasons may be disproportionately not accessing or benefitting from these outcomes.

The table below describes a suite of methods that build off each other to provide a more holistic understanding of the communities that are and can receive subjective well-being benefits from visiting the project site, and how accessible the site is for these communities.

All of the methods below that involve focus groups, surveys, or participatory exercises require inclusive stakeholder engagement² of all relevant communities within the project service area.

“Who” method steps:

Method (with link to more detail)	Method Outcomes	Method Description	Human Subject Research Expertise Needed*	Effort Level
Describe stakeholders	Project service area boundaries	Identify geographic boundary that encompasses all communities that could visit the project site	No	Low
	Demographics and social vulnerability of those in the project service area	Collate comprehensive demographic data of the communities within the project service area	No	Low
	List of relevant stakeholders in the project service area	Conduct a stakeholder assessment to understand who in the project service area is interested in visiting the project site and may experience a change in their subjective well-being as a result	No	Low
Accessibility checklist (from project perspective)	Status of project site accessibility	Fill out a project checklist to identify accessibility of the project site	No	Low
Assess stakeholder perceptions on access to and distribution of subjective well-being outcomes	Understanding of whether access to the site and distribution of well-being outcomes is disproportionate compared to the project service area.	<p>Step 1. Use focus groups, workshops, surveys, and/or participatory mapping <i>targeting people in the project service area</i> to ask questions about access, distribution, and barriers to accessing subjective well-being benefits from the project.</p> <p>Step 2. Consider information collected through step 1 in the context of the “who” information you already collected.</p>	Yes	High

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² There are many resources available that provide best practices and guidance for inclusive engagement. Some examples include: [Five step approach to stakeholder engagement](#) (BSR); [Equitable Community Engagement Toolkit](#) (Boston Public Health Commission); [Designing equity-focused stakeholder engagement to inform state energy office programs and policies](#) (NASEO); [Inclusive community engagement](#) (C40 Cities), and; [Stakeholder engagement for inclusive water governance](#) (OECD).

Alternatively, you may want to consider whether subjective wellbeing outcomes are available to various groups based on project site access generally. The methods, linked [here](#), will help identify a) vulnerable groups and historically underrepresented stakeholders in the project service area; b) the accessibility of the project within the project service area; and c) whether groups who are interested in visiting the site may be disproportionately not accessing or benefitting from these outcomes.

For more information on the GEMS project metrics and protocols, visit [this page](#).

