



## **A Smarter Way to Measure Ecosystem Health**

Water security is one of the most pressing challenges facing humanity. Already, 80% of the world's population is threatened with insufficient water quantity or quality. As the climate continues to change and become less predictable, so does the planet's finite supply and flow of fresh water.

Despite decades of research and interest in assessing the sustainability of the Earth's freshwater systems, so far there has been no approach that links the health of an ecosystem to the benefits from nature that people rely on – and more importantly, makes that information useful to the people and institutions making water-related decisions on the ground.

## **The Freshwater Health Index**

The Freshwater Health Index is a new tool that assesses various indicators of freshwater health at the basin scale. Built on a solid foundation of science, it addresses the gaps of other freshwater assessment methods and meets a range of needs.

The Index provides decision support through a novel set of indicators that transparently assesses the health of freshwater systems, where “health” is defined as the ability to deliver drinking water, crop irrigation, flood protection and other water-related ecosystem services sustainably and equitably — linking upstream areas (supply) with downstream communities (demand). It also offers:

- information to help in developing plans and policies at the basin scale, while also offering a global picture of freshwater health;
- a snapshot of current conditions in the basin that can be repeated and can help evaluate scenarios for land-use change, infrastructure development and climate change; and
- a picture of the tradeoffs of a given action as well as areas of opportunity.

The Freshwater Health Index was designed by an interdisciplinary team of scientists and potential end-users, including policy makers, resource managers, private industries and other large-scale water users. It is a flexible tool designed to reflect basin-specific information on stakeholders' preferences, underlying pressures and drivers, and differing stages of economic development.

### Global in Scope, Local in Scale

Maximizing benefits in some areas often means making tradeoffs in others. The Freshwater Health Index is designed to make those tradeoffs explicit. An ongoing dialogue between scientists and local stakeholders ensures that the end result is salient and credible. Using this standardized approach to assess tradeoffs, stakeholders can identify the scenarios that benefit both people and nature, and the lessons learned can be applied to other basins.

The Freshwater Health Index leverages considerable experience in synthesizing social and ecological data, developing indicator-based decision support tools and working at the intersection of conservation and human development. It is being applied in the Lower Mekong (Laos, Vietnam and Cambodia) and in China's Dongjiang basin. Applications in Latin America and Africa are in development.

### Learn More

For more information about the Freshwater Health Index, details about how to conduct a basin assessment, or other questions, please visit [www.freshwaterhealthindex.org](http://www.freshwaterhealthindex.org) or contact us at [info@freshwaterhealthindex.org](mailto:info@freshwaterhealthindex.org).

## Freshwater Health Index Components and Indicators

ECOSYSTEM VITALITY	ECOSYSTEM SERVICES	GOVERNANCE & STAKEHOLDERS
<p><b>Water Quantity</b> Deviation from natural flow Groundwater storage depletion</p> <p><b>Water Quality</b> Suspended solids Total nitrogen Total phosphorus Other quality parameters of concern</p> <p><b>Basin Condition</b> Channel modification Land cover naturalness</p> <p><b>Biodiversity</b> Species of concern Invasive &amp; nuisance species</p>	<p><b>Provisioning</b> Water supply reliability Biomass for consumption</p> <p><b>Regulation &amp; Support</b> Sediment regulation Water quality regulation Flood regulation Disease regulation</p> <p><b>Cultural</b> Conservation areas Recreation</p>	<p><b>Enabling Environment</b> Water resources management Rights to resource use Incentives &amp; regulations Financial capacity Technical capacity</p> <p><b>Stakeholder Engagement</b> Information access Engagement in decision-making processes</p> <p><b>Vision &amp; Adaptive Governance</b> Strategic planning &amp; adaptive management Monitoring &amp; learning mechanisms</p> <p><b>Effectiveness</b> Enforcement &amp; compliance Distribution of benefits Water-related conflict</p>

### For More Information

Visit [www.freshwaterhealthindex.org](http://www.freshwaterhealthindex.org)

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