

# How to consider nature's impact on mental health in city plans

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Visitors enjoy the Washington Park Arboretum located in Seattle, Washington.  
Credit: University of Washington

Almost one in five adults in the U.S. lives with a mental illness. That statistic is similar worldwide, with an estimated 450 million people currently dealing with a mental or neurological disorder. Of those, only about a third seek treatment.

Interacting with nature is starting to be recognized as one way to improve [mental health](#). A number of scientific studies have shown that nature experiences may benefit people's psychological well-being and cognitive function. But it has been difficult to find ways to quantify these benefits in a useful manner for cities or organizations that want to integrate nature to improve mental [health](#).

Now, an international team led by the University of Washington and Stanford University has created a framework for how city planners and municipalities around the world can start to measure the mental health benefits of nature and incorporate those into plans and policies for cities and their residents. The study will appear July 24 in *Science Advances*.

"Thinking about the direct mental health benefits that nature contact provides is important to take into account when planning how to conserve nature and integrate it into our cities," said Greg Bratman, lead author and an assistant professor at the UW School of Environmental and Forest Sciences. "The purpose of this paper is to provide a [conceptual model](#) of one way we can start to think about doing this."

The study brought together more than two dozen leading experts in the



[natural](#), social and health sciences who study aspects of how nature can benefit human well-being. Their first step was to establish a baseline, collective agreement regarding the understanding of the impacts of nature experience on aspects of cognitive functioning, emotional well-being and other dimensions of mental health.



A man examines a fern and other plants within Washington Park Arboretum in Seattle, Washington. Credit: University of Washington

"In hundreds of studies, nature experience is associated with increased happiness, social engagement, and manageability of life tasks, and decreased mental distress," said senior author Gretchen Daily, faculty director at the Stanford Natural Capital Project. "In addition, nature

experience is linked to improved cognitive functioning, memory and attention, imagination and creativity, and children's school performance. These links span many dimensions of human experience, and include a greater sense of meaning and purpose in life."

While this line of study is still emerging, experts agree that nature can reduce risk factors for some types of mental illnesses and improve psychological well-being. They also agree that opportunities for nature experiences are dwindling for many people around the world because of [urban growth](#).

"For millennia, many different cultures, traditions, and religious and spiritual practices have spoken directly to our deep relationship with nature. And more recently, using other sets of tools from psychology, public health, [landscape architecture](#) and medicine, evidence has been steadily gathering in this emerging, interdisciplinary field," Bratman said.

The study outlines how [city planners](#), landscape architects, developers and others could eventually anticipate the mental health impacts of decisions related to the environment.

Many governments already consider this with regard to other aspects of human health. For example, trees are planted in cities to improve air quality or reduce urban heat island effects, and parks are built in specific neighborhoods to encourage physical activity. But these actions don't usually directly factor in the mental health benefits that trees or a restored park might provide.





Two children explore the grounds within Washington Park Arboretum in Seattle, Washington. Credit: University of Washington

"We have entered the urban century, with two-thirds of humanity projected to be living in cities by 2050. At the same time, there is an awakening underway today, to the many values of nature and the risks and costs of its loss," Daily said. "This new work can help inform investments in livability and sustainability of the world's cities."

The research team built a conceptual model that can be used to make meaningful, informed decisions about environmental projects and how they may impact mental health. It includes four steps for planners to consider: elements of nature included in a project, say at a school or across the whole [city](#); the amount of contact people will have with nature; how people interact with nature; and how people may benefit from those interactions, based on the latest scientific evidence.

The researchers hope this tool will be especially useful in considering the possible mental health repercussions of adding—or taking away—nature in underserved communities.

"If the evidence shows that nature contact helps to buffer against negative impacts from other environmental predictors of health, then access to these landscapes can be considered a matter of environmental justice. We hope this framework will contribute to this discussion," Bratman said. "Eventually, it could be developed and potentially used to help address health disparities in underserved communities."

**More information:** G.N. Bratman et al., "Nature and mental health:



An ecosystem service perspective," *Science Advances* (2019).  
[advances.sciencemag.org/content/5/7/eaax0903](https://advances.sciencemag.org/content/5/7/eaax0903)

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