

Young Science Communicator's

The Young Science Communicator's Competition (YSCC) challenges young scientists and researchers under the age of 35 to communicate their work to audiences beyond their scientific peer community through a written article, a radio script or a viral video. It is run biennially by SAASTA, with the next round to be run in 2014/2015. YSCC aims to encourage the development of science communication skills in young scientists which will carry through their careers, and forms part of an overall initiative to encourage scientists to communicate their scientific research in a creative and innovative manner, thereby developing science communication skills across the SET sector. YSCC provides an opportunity to entice young scientists, who may not have had previous opportunity or incentive to communicate their work, and to expose them to the opportunities in science communication. This year's winners were Morgan Trimble and Leon van Eck.



Budongo Forest in Murchison Falls National Park, Uganda. Living in an area with a high diversity of species may promote mental health and help prevent disease.

By **Morgan Trimble**

Why conserve biodiversity? Your life could depend on it

Last night I felt my anxieties melt away as I sat enjoying a sundowner in a friend's back garden. Sure, both pinotage and social connections are known stress-relievers. But I believe the biggest factor was that my friend's treed garden overlooks a stunning view of a rushing river, complete with chirping birds, calling frogs, and a family of otters. It's a stark contrast to my little flat in a bustling urban neighbourhood with a view of a paved parking area and a neighbouring apartment block.

Many of us enjoy an occasional picnic in the park, a leisurely hike through the local nature reserve, or even a far-flung safari. It feels good to get out and breathe the fresh air. But

could spending time in nature literally save your life? New research points in that direction.

Back in 1984, a landmark study showed that patients recovering from surgery did so more quickly and with less pain medication if their hospital window had a view of trees rather than a building. Scientists have since discovered links between people's access to so-called 'greenspaces', for example gardens or city parks, and their physical and mental health. People who live in areas with more greenspaces have a lower incidence of anxiety disorders and depression. They also experience lower levels of specific ailments, especially respiratory disorders and diseases associated

with a lack of physical activity. Of course, this might be attributable to greenspaces reducing pollution and encouraging exercise.

But recent research also links spending time in nature to specific physiological responses in our bodies that promote good health. In Japan, *Shinrin-yoku*, or strolling through a forest to bask in the atmosphere, has become a popular form of preventive medicine. Researchers have linked this 'forest bathing' to near immediate reduction in stress hormones, pulse rate and blood pressure, and relaxation of the nervous system. Forest bathing also improves immune function for at least a week.

Interestingly, research also supports

Competition



a link between the psychological benefits of spending time in nature and biodiversity. The more species-rich an area is, the greater the increase in psychological well-being experienced by greenspace users.

Still other research links the lack of biodiversity to an increase in health problems including asthma, allergies, and autoimmune disorders. Ecologists have long noted the link between degraded ecosystems, those that have lost species, and their susceptibility to collapse and invasion by exotic species that negatively affect ecosystem health. Recently, scientists have extended that theory by conceptualising the human body as the 'ecosystem', and its biodiversity as the menagerie of microorganisms it supports. Ecologist Ilkka Hanski and colleagues have found that people who live in homes surrounded by diverse plant life, host

a higher diversity of bacteria on their skin. These people also show decreased markers for inflammation and allergies. Contrastingly, individuals living in areas with low environmental biodiversity had fewer bacteria species on their skin and were more likely to have skin allergies.

This might seem counterintuitive to people used to associating bacteria with illness, but in fact, our bodies rely on good bacteria to stay healthy, in part because they fight off bad bacteria. For example, a reduced diversity and altered composition of microorganisms in the gut has been associated with allergies, diabetes, inflammatory bowel disease, and even obesity. What's especially interesting, however, is the idea that living in an area of high biodiversity in the environment might promote a diverse and healthy community of microbes within our own 'human ecosystems'

Above: On safari at Murchison Falls. New research suggests spending time in nature can improve your mental and physical health, so a safari could be just what the doctor ordered.

Above left: Waterfall along the hiking trail in the Rwenzori Mountains, Uganda. Spending time basking in forests has become a popular form of preventive medicine in Japan where it is known as Shinrin-yoku.

Left: Enjoying the view of the Three Rondavels, Blyde River Canyon, South Africa. Could a magnificent view improve your mood and your overall health? Science suggests views of nature are better for us than looking at industrial landscapes.

Images: Morgan Trimble

that helps us stave off disease.

These new findings linking a healthy, diverse natural environment to our physical well-being can be added to the long list of reasons why it's important to conserve biodiversity. As a society, we are becoming increasingly urbanised. Roughly two-thirds of the human population will be city-dwellers by 2050. It's not enough that biodiversity is out there somewhere in a protected area. We also need to ensure that, as individuals, we connect often enough and meaningfully with nature. Promoting greenspaces in city planning is one option. But perhaps getting out of town and into nature this weekend, and as often as possible, is just what the doctor ordered. □

Morgan Trimble is a PhD student at the Conservation Ecology Research Unit at the University of Pretoria. Her research focuses on biodiversity in human-modified landscapes and the implications for people and for conservation. She likes to spend time in nature as often as possible, taking photographs and soaking up the atmosphere.