

Topic: Soil & Light

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Introduction

World Soil Day (WSD) is held annually on 5 December as a means to focus attention on the importance of healthy soil and advocating for the sustainable management of soil resources.

In 2002, the International Union of Soil Sciences (IUSS) made a resolution proposing the 5th of December be World Soil Day in order to celebrate the importance of soil as a critical component of the natural system and as a vital contributor to human well-being. 2015 was also declared to be the International Year of Soils in hopes of raising as much awareness as possible about the enormous role soil plays in food security. Unsurprisingly, so far it's mostly been the global community of 60,000 or so soil scientists who have been the ones celebrating the day the most.

The Global Soil Partnership has dedicated World Soil Day 2017 to the theme "Caring for the Planet starts from the Ground". Soil is a finite natural resource. On a human time-scale it is non-renewable. However, despite the essential role that soil plays in human livelihoods, there is a worldwide increase in degradation of soil resources due to inappropriate management practices, population pressure driving unsustainable intensification and inadequate governance over this essential resource.

According to the Food and Agriculture Organization of the United Nations (FAO):

- Soil holds three times as much carbon as the atmosphere and can help us meet the challenges of a changing climate
- 815 million people are food insecure and 2 billion people are nutritionally insecure, but we can mitigate this through soil.
- 95% of our food comes from soil
- 33% of our global soils are already degraded

Soil is the upper layer of earth, a mixture of organic and inorganic matter, in which plants grow. It is a finite natural resource.

World Soil Day 2017 activities aim to communicate messages on the importance of soil quality for food security, healthy ecosystems and human well-being.

- An international day to celebrate Soil was recommended by the International Union of Soil Sciences (IUSS) in 2002, under the leadership of the Kingdom of Thailand and within the framework of the Global Soil Partnership. The FAO Conference unanimously endorsed World Soil Day in June 2013 and requested its official adoption at the 68th UN General Assembly. In December 2013 the UN General Assembly responded by designating 5 December 2014 as the first official World Soil Day.
- The date of 5 December for WSD was chosen because it corresponds with the official birthday of H.M. King Bhumibol Adulyadej, the King of Thailand, who officially sanctioned the event.
- In 2016 this day was officially recognized in memory and with respect for this beloved monarch who passed away in October 2016 after seven decades as head of state.

The best way to celebrate this day is to do exactly what scientists the world over so badly needs to: educate ourselves. An enormous amount of damage is done to the planet every year due not to ill will, but to ignorance—many of us simply do not know enough about the earth to know when we are damaging it, sometimes irreparably. As it turns out, there are a number of things we regular people can do that can greatly help the soil we live off of remain in good condition. For example, we can plant a rain garden i.e. a shallow depression in the yard or garden rainwater can easily flow into, which helps reduce soil erosion.

It is also a good idea to reduce the amount of surfaces such as driveways and patios to a minimum, as water flowing over them gains momentum and causes more erosion than it normally would once it reaches the soil.

Another thing which can be done for conserving soil is to have a rain barrel placed somewhere where it can collect rainwater flowing off your roof, which you can then use to water your lawn. Whatever you decide to do, remember that even the smallest gestures can make a big difference to Mother Nature!

- Another thing to be considered which has started posing a threat to the environment and Human life is **Light Pollution**.

The inappropriate or excessive use of artificial light is known as Light Pollution and this can have serious environmental consequences for humans, wildlife, and our climate. **Light pollution** is excessive, misdirected, or obtrusive artificial (usually outdoor) light. Too much light pollution has consequences: it washes out starlight in the night sky, interferes with astronomical research, disrupts ecosystems, has adverse health effects and wastes energy.

By allowing artificial lights to wash out our starry night skies, we are losing touch with our cultural heritage (e.g., what has made us who we are). We are also losing touch with what could inspire future generations.

With more than half of the world's population now living in cities, 3 out of every 4 people in cities have never experienced the wonderment of pristinely dark skies.

In **disrupting ecosystems**, light pollution poses a serious threat in particular to nocturnal wildlife, having negative impacts on plant and animal physiology. It can confuse the migratory patterns of animals; alter competitive interactions of animals, change predator-prey relations, and cause physiological harm. The rhythm of life is orchestrated by the natural diurnal patterns of light and dark; so disruption to these patterns impacts the ecological dynamics.

With respect to **adverse health effects**, many species, especially humans, are dependent on natural body cycles called circadian rhythms and the production of melatonin, which are regulated by light and dark (e.g., day and night). If humans are exposed to light while sleeping, melatonin production can be suppressed. This can lead to sleep disorders and other health problems such as increased headaches, worker fatigue, medically defined stress, some forms of obesity due to lack of sleep and increased anxiety. And ties are being found to a couple of types of cancer. There are also effects of glare on aging eyes. Health effects are not only due to over-illumination or excessive exposure of light over time, but also improper spectral composition of light (e.g., **certain colors of light**).

The good news is that light pollution can be reduced fairly easily by:

- Shielding lights properly i.e. Choosing outdoor light fixtures that are shielded, meaning there is a solid cap above the light bulb that prevents light from being emitted directly to the sky, to minimize sky pollution
- By only using light when and where it is needed and Turning off any unnecessary outdoor lights when you are home for the night or before going to bed to prevent wasteful dusk to dawn lighting
- By only using the amount that is needed and by Taking steps to prevent and reduce light pollution in your home, work, and community. Close the blinds and curtains to prevent light spill.
- By using energy efficient bulbs, and by using bulbs with appropriate spectral power distributions for the task at hand.
- By using IDA certified Dark Sky Lighting, which is designed to minimize glare, light spill, and sky glow.

**Read further:**

<https://happydays-365.com/soil-day/world-soil-day-december-5/>

<http://www.fao.org/world-soil-day/about-world-soil-day/en/>

<http://www.darksky.org/light-pollution/>

<http://www.delmarfans.com/educate/basics/lighting-pollution/#dark-sky>