

# ENVIRONMENTAL HEALTH RESEARCH FOUNDATION

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## **EHRF Research Update:**

### **The Value of Green Space in a Drought Situation**

**April 2016**

#### **Summary**

- The environmental and public health benefits of properly maintained green space are well documented by decades of independent research.
- This Environmental Health Research Foundation (EHRF) Research Update examines these benefits in instances where drought conditions exist and/or persist.
- This Research Update includes a summary update of EHRF's 2011 Benefits of Green Space<sup>1</sup> research along with a review of more recent studies conducted by the University of California at Los Angeles (UCLA) assessing green space benefits in areas experiencing drought conditions.

#### **Discussion**

In 2011, the Environmental Health Research Foundation (EHRF) conducted a review of the scientific literature on the benefits of green space, notings its findings in a report, the Benefits of Green Space. The report concluded that there is abundant documentation in the scientific literature of the environmental and health benefits of green space.

- "Green space" here connotes such turf-related surfaces as residential lawns, commercial or institutional turf surfaces and public facilities such as parks and playing fields.
- The benefits of green space include:
  - erosion control
  - purification of run-off water
  - removal of air pollutants from wind
  - energy and cost savings on air conditioning, including mitigation of "heat island" effects of cities
  - increased recreational opportunities
  - reduced stress
  - increased physical activities/reduced risk of obesity/improved health

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<sup>1</sup> J. Heinze, "Benefits of Green Space – Recent Research," Environmental Health Research Foundation, April 25, 2011, available at: <http://www.ehrf.info/wp-content/uploads/2011/09/BenefitsofGreenSpace.pdf>

To assess and determine the relevance of these environmental and health benefits in a drought situation, an updated review of the scientific literature was recently conducted. The findings include:

1. A UCLA Fielding School of Public Health review<sup>2</sup> noted seven potential health-related impacts of Urban Water Conservation in California, the response plan to the drought situation there. Interestingly, all but one of the potential impacts can be mitigated by proper utilization of green space combined with increased use of recycled water (grey water and non-potable water):
  - Air quality/air pollution – green space removes allergens and dust from the wind
  - Surface and groundwater quality – green space removes suspended solid materials and organic pollutants and prevents surface erosion
  - Urban heat island effects – green space next to buildings provides substantial energy and cost savings
  - Recreational opportunities – green space in parks and playing fields provides recreational opportunities
  - Household financial burden – use of recycled water mitigates the cost of green space use
  - Water and wastewater infrastructure – proper design and construction will prevent health issues with recycled water (just as with natural sources of water)
  
2. A separate recent study<sup>3</sup> by the UCLA Health Sciences Department found that expanding the use of recycled water would:
  - Reduce water and energy use,
  - Cut greenhouse gas emission
  - Benefit public health.

The study concluded that “recycled water has great potential for more efficient use in urban settings and to improve the overall resiliency of the water supply.”

John E. Heinze, Ph.D.  
Executive Director

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<sup>2</sup> S. Sokolow, “Health and Water Conservation Policy: How can California’s water community consider human health while protecting against California’s drought?,” UCLA Fielding School of Public Health, Water Resources Group, December 10, 2014, available at: <http://www.environment.ucla.edu/water/post-research.php?s=health-and-water-conservation-policy-how-can-californias-water-community-consider-human-health-while-protecting-against-californias-drought>

<sup>3</sup> S. Sokolow, and colleagues, “Impacts of Urban Water Conservation Strategies on Energy, Greenhouse Gas Emissions, and Health: Southern California as a Case Study” *American Journal of Public Health*, 2016; online March 17, 2016; abstract available at: <http://ajph.aphapublications.org/doi/10.2105/AJPH.2016.303053>