



## GrayIsGreen

### Who are we?

**Gray Is Green** is an online gathering of older adult Americans aspiring to create a green legacy for the future. As environmentally conscious elders, we respond to a generational call: to co-create a future of economic justice, ecological sustainability and social justice.

We hold next generations of humans in mind and consider the future of ecosystems and other species. We are alert to the historic challenges facing our planet. And we are aware of the question arising from descendants generations hence:

*What did you do, when you knew?*

### What do we do?

We aspire to embrace our eldership, living beyond consumerism and ageism. **Our Curriculum for Gray-Green Living** offers a variety of ways to join—and re-engage with—this elder movement.

We offer a periodic newsletter, a speaker's bureau, online resources, a [Facebook page](#) for relevant updates. In partnership with congenial organizations, we serve as a central clearinghouse of ideas and communications for older adults interested in greening their lives, learning about sustainability, advocating for sound public policy, being creative stewards or grandparents, emerging as elders, and mentoring young people.

*We invite **you** to get involved!*

[www.grayisgreen.org](http://www.grayisgreen.org)

## Community Resilience Water Resources in the Community

In urban and suburban areas, the water we use in our homes and businesses is usually provided by a water utility. Reservoirs, rivers, and wells are common sources, which are treated to make the water safe for drinking before it is delivered to customers through a piped network.

If you live in a rural area your water source often comes from a well drilled into an underground aquifer. Aquifers are underground water sources that feed wells and springs, while also connecting with rivers and lakes. When rain flows into the ground it replenishes ground water and supports long-term storage of water supplies.

All of these water sources are part of the water cycle<sup>1</sup>, recharged by rain. Changes to the water cycle such as drought or floods affect our water supplies. Human actions which change how the natural water cycle operates can also affect our water supplies.

### What is an Impervious Surface?

Impervious surfaces are barriers to natural water flow commonly associated with buildings and roads. Street pavement, parking lots, driveways and sidewalks, as well as building roofs are all impervious surfaces. Unpaved ground can also be impervious to rain water if it has been compacted by heavy traffic, for instance by construction vehicles.

### Challenge of Impervious Surfaces

Creating impervious surfaces that prevent rain from soaking into the ground is one human activity that changes the natural water cycle. Impervious surfaces change the water cycle<sup>2</sup> because rainfall, instead of soaking into the ground, flows quickly to a stream or waterbody. This extra water flow can cause flooding. In regions where farmland has rapidly changed to suburban development, the addition of many new roads and buildings with their impervious surfaces can erode the banks of local streams or cause them to overflow.

Impervious surfaces also prevent rain from percolating into the ground to the aquifer. Water that quickly flows and overwhelms local streams and rivers will also quickly flow away and is no longer available during drier times. When land is in its natural, undeveloped state, vegetation keeps the soil in place and helps the rain to soak into the ground instead of flowing into a waterbody. Studies have found that water quality declines in streams when more than 10% of a watershed area<sup>3</sup> is paved and covered with buildings.

### Impervious Surfaces and Water Quality

Impervious surfaces can degrade water quality because rainfall, instead of soaking into the ground, flows quickly to either a stream or

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## Community Resilience: Water Resources in the Community

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waterbody. The runoff carries small amounts of polluting materials from the ground into the receiving waterbodies. Even naturally occurring materials such as soil, vegetation, and pet waste become pollutants since they are present in many places, and their effects are multiplied when suddenly washed into a nearby stream, river or lake.

Other pollutants that runoff from impervious surfaces into our water bodies include street litter<sup>4</sup>, oil and other fluids leaking from vehicles<sup>5</sup>, [fertilizer, pesticides and other garden chemicals<sup>6</sup>. We might think that one candy wrapper, a few drops of oil leaking from our car, or a little extra fertilizer can't affect the water quality in the nearby stream, but

when you start adding together all the small amounts from everyone using these chemicals, it becomes a significant amount of pollution.

*"Little drops of water,  
Little grains of sand,  
Make the mighty ocean  
And the pleasant land."*

*–Source: Little Things by Julia Carney*

1 see subtopic Hydrologic Cycle

2 <http://www.prep.unh.edu/resources/pdf/theimpactsof-nhep-04.pdf>

3 <http://www.pwconserve.org/issues/watersheds/stormwater/impervious.htm>

4 [http://water.epa.gov/type/oceb/marinedebris/upload/508\\_Trash-Free-Waters\\_Urban-Coastal-Factsheet\\_Final.pdf](http://water.epa.gov/type/oceb/marinedebris/upload/508_Trash-Free-Waters_Urban-Coastal-Factsheet_Final.pdf)

5 <http://www.mass.gov/eea/agencies/massdep/water/watersheds/nonpoint-source-pollution-education-motor-oil.html>

6 <http://www.ipm.ucdavis.edu/WATER/U/watqual.html>



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