WATER QUALITY AND CONSERVATION
(1984, R1992, R2000, R2001, R2007, R2019)

Policy Statement

The American Society of Landscape Architects believes that water quality is an essential component of ecosystem health and plays a critical role in community sustainability and public health. Development and other factors impact both potable water supplies and other indispensable waters, including coastal, marine, and freshwater.

Landscape architects address water quality through ecologically based practices that help reduce or remove pollutants in urban, rural, and conservation areas. To help protect water quality and conserve valuable water resources, ASLA encourages planning, design, management, and policies that are science-based, collaborative, creative, and equitable.

Rationale

Ample, clean water supplies are necessary to help preserve health, sustain quality of life, support economic stability, and maintain environmental quality. Water quality reflects unique geographic contexts, including aquifers, marine and freshwater bodies, and the ecosystems that depend upon them, from hydric to xeric. Water quality impacts the quantity of useable water; thus both must be considered.

While potable water is a primary concern, water quality also encompasses safe contact (for humans and wildlife) and overall ecosystem health. Safe contact and ecosystem health do not require the same standards as drinking water and may require specific organisms and particles to be viable for specific functions. When assessing environmental health, understanding that certain factors such as the level of particulate matter, water chemistry, and water temperature among others, will benefit specific ecosystems. Dealing effectively with the diversity and complexity of water quality issues is exacerbated by the fact that natural circulation of water transcends political and property boundaries, often making management of this resource challenging.

Development, population growth, agricultural and industrial pressures, resource extraction, and other factors continue to threaten water quality and emphasize the need for wiser and more creative use of resources. Climate change is expected to have significant and diverse impacts, thus exacerbating existing water quality problems. Rising temperatures affect the amount of dissolved oxygen in water, which impacts plants, wildlife, and larger habitats. Flooding from more frequent and intense rainfall will increase pollutants and particulate matter, thus existing (and often outdated) water and sewer infrastructure will be further challenged. Outbreaks of bacteria, algae blooms and

chemical toxins will increase due to nutrients and other pollutants. Ranges of climate-sensitive diseases will change, and some vector and water borne diseases will increase. Droughts will stress water quality as well as quantity. Sea level rise will threaten existing ecosystems and impact freshwater supplies through salinization.

Water supplies continue to be degraded for a number of reasons: waterways are used as dumping grounds for wastes, fossil water reserves continue to be drawn down, wetlands are drained and filled, rivers are channelized, the building over of streams and in floodplains increases downstream flooding and lessens infiltration, and obsolete water infrastructure has increased "non-point" pollution. In addition, water continues to be wasted by the unnecessary selection, use, and poor maintenance of inappropriate plant material and inefficient irrigation technology. Impervious surfaces caused by development increase volumes and rates of storm flows, carry pollutants into streams, prevent groundwater recharge, reduce stream base flows, and impact water temperatures. The channels, dams, and reservoirs built to mitigate these effects have further disrupted the functions of natural ecosystems.

While the US has had successes in protecting water quality, EPA research has found "[s]tates report that nonpoint source pollution is the leading remaining cause of water quality problems."[i] Landscape architects are uniquely positioned to deal with non-point source (NPS) pollution -- human and natural pollutants picked up by water from rain and snowmelt. Historically, one of the key characteristics defining the profession of landscape architecture has been stormwater management that protects and enhances water quality and quantity, while providing multiple additional functions and ecosystem services. Landscape architects have been in the forefront of developing innovative practices based on natural systems that promote sustainability and resiliency in our urban and natural environments.

Landscape Architects help protect water quality by directly addressing many of the factors affecting water resources. By incorporating green infrastructure and other stormwater management practices into their projects, they help reduce the movement of pollutants and other debris offsite and help infiltrate stormwater on-site, thus benefiting both flora and fauna; they promote and incorporate the use of greywater systems and other water capture measures to help reduce the need for external water sources; their designs help restore ecosystem health and resiliency through the appropriate use of native and climate-appropriate vegetation; they utilize appropriate irrigation and other landscape management technologies to reduce dependence on critical resources; their approach to multi-functional, multi-purpose design solutions allow for less destructive human interaction with the environment.

Maintaining the nation's economy and lifestyle depends partly upon our ability to conserve water, avoid water-borne diseases, reduce pollution, and use land and water resources appropriately. It is possible to improve the health of the environment. Degraded aquatic and riparian habitats can be rehabilitated, by utilizing locally climate-adapted plants and appropriate use of water resources. Urban and other development can include resilient ecological communities. Runoff and effluents can be reclaimed to reduce the need for imported fresh water. Reservoirs of all kinds can be adapted to integrate with multi-functional natural ecosystems and human communities. New development can be arranged and constructed to minimize impervious cover. Urban runoff can be directed to filter through natural cleansing systems (soil and vegetation profiles), recharge ground water supplies, and maintain riparian base flows.

ASLA supports research, planning, design, management, and policies that protect and improve water resources for consumption, agriculture, recreation, and other uses.

Resources:
The Clean Water Act
https://www.epa.gov/laws-regulations/summary-clean-water-act

The Safe Drinking Water Act
http://www.epa.gov/ogwdw/sdwa/basicinformation.html

Environmental Protection Agency - Water Quality Standards: Regulations and Resources
https://www.epa.gov/wqs-tech

United States Geological Survey
https://www.usgs.gov/science/science-explorer/Water

ASLA Resources Include:
https://www.asla.org/waterandstormwater.aspx
https://www.asla.org/climateadvocacy.aspx

[i] https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution