



National Garden Clubs, Inc.

PROTECTING AQUATIC ECOSYSTEMS

Protecting Aquatic Ecosystems is one of NGC's Special Projects for 2011 - 2013. This project recognizes that it is of utmost importance and urgency that members of National Garden Clubs, Inc., identify and address critical water issues at local, state, regional, national and international levels because Water equals Life.

Aquatic Ecosystems:

1. Rivers
2. Lakes and Ponds
3. Streams and Creeks
4. Marshes and Bogs
5. Wetlands
6. Coastal Estuaries
7. Aquifers
8. Floodplains
9. Springs

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Protecting Aquatic Ecosystems

Suggestions for Garden Clubs

Projects for Action and Education

- Create and promote educational hands-on programs for youth (classrooms, Scouts, 4-h, Junior Garden Clubs).
- Sponsor seminars, workshops and community education events to foster awareness and procedures for protecting aquatic ecosystems.
- Clubs, Districts and/or States adopt an aquatic ecosystem as a project.
- Organize and work with cooperative groups of states sharing like-concerns. (i.e. Mississippi River Basin, Great Lakes Group, Dept. of Environmental Quality, Dept. of Fish and Game/Wildlife and Ecosystem Survival for Central and South America).
- Appoint a Water Conservation/Protection Chairman for each club and district. Send contact information to State Chairman.
- Adopt water-issue positions.
- Sponsor District, State and Regional Workshops.
- Contact local extension service Master Gardeners to promote careful use of water.
- Learn and share information about the EPA's role in ecosystem management.
- Educate the public to practice organic gardening at home with handouts of how to make organic sprays using household ingredients. (i.e. baking soda, vegetable oil, vinegar, composting).
- Access programs on websites for teachers/students such as: *bay.org*, *geology.com*, *Community Science Action Guides*, *water.org*
- Provide educational exhibits at flower shows.
- Become legislatively informed (contact Marion Hilliard, NGC Government Action Committee Chairman – (marionh@bellsouth.net) for information.
- Encourage at least one person in each club to become a member of The Nature Conservancy, *Audubon* Action, and Clean Water Action.

What is a Watershed?

A **watershed** is an area of land over which all water flows to a common body of water such as a lake or pond. We all live in a watershed or drainage basin. Watersheds can be as large as the Mississippi River drainage basin or as small as a farm with a pond. Your watershed may be made up of mountains, farms, houses, businesses, or towns.

A watershed is a good example of how the living and nonliving things within an ecosystem depend upon each other. Altering a watershed will affect all the living things within that watershed. People can alter a watershed by paving over land and constructing buildings. This will affect how water flows over the land and may cause harmful materials to flow directly into the water. This will have an effect on the organisms that depend on the water for survival. For example, some fish feed on organisms in the water. Polluted water may cause these organisms to die, leaving the fish with no food. This is why we must understand these relationships and protect our water resources. **You share your watershed with all other living things within the ecosystem.**

Source: Project Oceanography

NGC WATER CONSERVATION PLATFORM

National Garden Clubs, Inc. believes it is imperative that we support and undertake proactive initiatives for the protection, conservation and restoration of the quality of the Nation's coastal waters, wetlands, aquifers, watersheds, lakes, rivers and streams, through educational programs, conservation efforts, increased advocacy and partnerships with related government agencies, and state and national grassroots water coalitions.

Adopted

2008 NGC Fall Board Meeting

How Water Works for Us

70% of the earth's surface is water; 75% of the human body; and 90% of human blood is water. Of all the water there is on earth, 97% is in seas and oceans and 2% is in ice caps. Of the remaining 1% fresh water, only a small percentage is accessible. And from what's accessible, 98% is used for agriculture and industry.

Water's necessity does not end with humans. In fact, water is the quintessential part of most living organisms. Even plants need water. **There is more animal and plant life found in water than on land and in the air collectively.**

For humans, water is so important because it's used in so many activities. We need to drink water to survive and stay healthy. We need water for bathing, cleaning and washing. We need water for cooking. Water is in the form of milk, fruits, meats, vegetables, and even in stones.

Inside our body, water helps regulate our body temperature. Water is nature's air conditioner inside our body - when it's hot, water keeps the body cool through perspiration, and when it's cold, water keeps the body warm through insulation. Water balances the electrolytes and controls and regulates blood pressure. Water forms a big and important portion of human saliva, sweat and tears. It keeps the moisture intact around the mouth and eyes. All of these are important body functions.

Our joints move because water works as a lubricant on them. Water, through its presence in and around the organs, cushions them from outside jolts. It also works as an excreting agent in our body by flushing the kidneys.

Source: *EzineArticles.com*

Aquatic Ecosystem Facts

Freshwater ecosystems cover less than one percent of the Earth's surface, but are home to 35 percent of all vertebrate species.

Global extinction rates for freshwater species are four to six times higher than those for terrestrial or marine species. **In the United States nearly half of the 573 animals on the threatened and endangered list are freshwater species.**

Forty percent of all fish species in North America are at risk or extinction.

In the United States, 69 percent of freshwater mussel species, which help to filter water, are at risk of extinction.

The amount of moisture on Earth has not changed. The water the dinosaurs drank millions of years ago is the same water that falls as rain today. Water is constantly being recycled as it evaporates, condenses and returns to Earth as precipitation.

Of all the water on earth only 2.5% is freshwater.

Of that 2.5%...

60% is trapped in glaciers and icecaps

10% is found in surface waters including lakes and rivers

30% is found in groundwater, but some of that is deep and out of reach.

Of all the water we take out of rivers, lakes and the ground...

70% is used for agriculture

22% is used for industrial purposes

8% is pumped into cities and homes for drinking, watering and washing.

The average American uses about 100 gallons of water a day – more than 15 times that used by many people in developing countries.

A staggering one person out of eight – nearly 900 million people in total - lacks access to clean water.

Every day 4,800 people worldwide die from waterborne diseases such as cholera, leptospirosis and botulism. Most waterborne diseases cause diarrheal illness, which is the second largest killer of children worldwide.

Source: Freshwater 101 Aquatic Ecosystems – National Geographic

More than 30 years after the Clean Water Act promised clean water, an overwhelming majority of Americans live within 10 miles of a polluted river, lake, or coastal water. These waterways are unsafe for fishing, swimming, or aquatic life.

Water Facts

- There are about one million miles of pipeline and aqueducts for water delivery in the US and Canada...enough to go around the earth 40 times!
- Water is the most common substance on earth, however only 1% of the earth's water is available for drinking.
- 66% (two-thirds) of the human body is water. A cow must drink 3 gallons of water to make 1 gallon of milk.
- 75% of a tree is water. 70% of an elephant is water.
- You can survive about three weeks without food, but only 3 days without water.
- It takes 50 glasses of water to grow enough oranges to make 1 glass of orange juice.
- You can fill an 8 oz. glass of water about 15, 000 times for the same cost as a six pack of soda pop.
- A tomato is 95% water, an ear of corn is 80% water.
- Rivers and streams make up 3.5 million miles.
- Lakes cover 41 million acres
- The average daily requirement for freshwater in the United States is about 338 billion gallons.
- There are more than 200,000 individual water systems providing water to the public in the United States.
- If the Earth were completely flat, it would be covered by water 2 miles deep!
- One gallon of gasoline can contaminate 750,000 gallons of water.
- We use about 108 gallons of water per person per day in our homes.
- There's as much water in the world today as there was thousands of years ago. In fact, it's the same water.
- A single dripping faucet can waste far more in a single day than one person needs for drinking in an entire week.
- Every glass of water brought to your table in a restaurant requires another two glasses to wash and rinse the glass.
- A leak of one drop per second wastes 2,400 gallons of water per year.

Source: Project Oceanography

Strategies for Protecting Aquatic Ecosystems

To Safeguard Aquatic Ecosystems:

1. Reduce water demand through effective conservation.
2. Manage water within the bounds of an effective ecological flow prescription.
3. Plan for ecological allocations during droughts.
4. Protect source watersheds.

Source: *nature.org* (*The Nature Conservancy*)

At home:

What you can do -

1. Turn off water when brushing teeth
2. Shorten your shower by 2 or 3 minutes
3. Fix leaky faucets
4. Wash only full loads of clothes
5. Water your yard before 8:00 a.m.
to reduce evaporation and wind interference
6. Install a smart sprinkler controller
7. Use a broom instead of a hose to clean
driveways and sidewalks
8. Check sprinkler system for leaks, over-spray,
and broken sprinkler heads
9. Use organic mulch around plants

What you can save -

3 gallons per day
5 gallons per day
20 gallons per day
15 to 50 gallons per load
25 gallons per day
40 gallons per day
150 gallons each time
500 gallons per month
Hundreds of gallons a year

Article Source: *bewaterwise.com*

At the office:

1. Post a hotline in kitchens and bathrooms to report leaks or waste to facility managers or maintenance personnel.
2. Ask employees for suggestions on saving water. Give a prize for the best idea(s).
3. Wash company vehicles at commercial car washers that recycle water.
4. Implement a water management plan for your facility, then educate employees through newsletters, posters and employee website.
5. Send the person in charge of your landscape to an irrigation workshop.
6. Limit turf areas at your facility. Landscape using xeriscape principles to cut water use in half.

Article Source: *GreenNurture.com*