



# DIGITAL EDUCATION

Cornell Cooperative Extension | Marine Program

Teacher/Student Resources

## RAIN GARDENS

*Protecting groundwater and surface waters*

### Topics and Keywords

(Define these words first, or refer to the **Glossary** on the last page)

Native plants  
Stormwater runoff  
Filtration

Groundwater  
Aquafer  
Nitrogen

Algae blooms  
Rain garden  
BBP's

### WATCH

#### Marine Minute Monday

What is Stormwater Pollution

[2x8nB https://www.youtube.com/watch?v=pZ5jR\\_s](https://www.youtube.com/watch?v=pZ5jR_s2x8nB)

Time 1 minute

#### Ground Water PSA

[https://www.youtube.com/watch?time\\_continue=125&v=cxmJ23omW74&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=125&v=cxmJ23omW74&feature=emb_logo)

Time 2:28 minutes

#### Marine Minute Monday

<https://www.youtube.com/watch?v=bRMAMiTiRrQ&feature=youtu.be>

Time 1 minute

### RESPOND

**Answer** (can be completed by watching the video and reading included fact sheets)

#1 What are the two factors that negatively impact water bodies in Suffolk County by 70%?

- Oil drilling
- Pathogen(bacteria)
- Nutrients(nitrogen)
- Sand mining

#2 Which shellfish as an adult can filter 20,000 gallons of water a day?

- Clam
- Scallop
- Mussel
- Moon snail

#3 Rain gardens capture and filter what?

- Stormwater runoff
- Fish eggs
- methane
- All of the above

#4 Which of the following does poor water quality **NOT** impact?

- Commercial fishing
- Swimming beaches
- Tourism
- Solar energy farms

- #5 What are four actions people can take to reduce stormwater pollution?
- Be a responsible pet owner
  - Follow fish laws
  - Use porous materials for driveways and walkways
  - Fix oil leaks on vehicles
  - Construct a rain garden

#6 What is an aquifer?

#7. Eelgrass and salt marsh grasses absorb what two pollutants of concern?

#8. What are some best management practices to protect groundwater? and local surface waters?

## Teacher/Student Resources

# WATER QUALITY

*Impacts our local economy and quality of life*

### FACTS:

- *More than 70% of water bodies in Suffolk County are negatively impacted by pathogens or nutrients.*
- *Through restoring shellfish populations, we can improve water quality. A single adult oyster can filter about 20,000 gallons of water per year!*
- *The installation of rain gardens can prevent stormwater pollutants from entering our waterways, by catching and filtering stormwater runoff*

**Discuss** (encourage collaboration, debate, and critical thinking based on video and fact sheets)

Brainstorm why clean water is important to you and to other animals and plants in nature.

As explained in one of the videos which project would you find most exciting to work on?

If you were in charge of local government, what else would you do to make sure our water quality continues to get cleaner?

What can you do as a citizen to help reduce stormwater runoff?

What are native plants



**Explore and Create** (encourage gathering of additional information beyond the video and fact sheets)

Learn more about the water quality monitoring and our local waters, by exploring the following websites.

Rain Garden Construction:

[https://s3.amazonaws.com/assets.cce.cornell.edu/attachments/3382/countyRain\\_Gardens\\_1\\_1\\_.pdf?1413557683](https://s3.amazonaws.com/assets.cce.cornell.edu/attachments/3382/countyRain_Gardens_1_1_.pdf?1413557683)

Native Plants for Rain Garden:

[https://s3.amazonaws.com/assets.cce.cornell.edu/attachments/3382/countyRain\\_Gardens\\_1\\_1\\_.pdf?1413557683](https://s3.amazonaws.com/assets.cce.cornell.edu/attachments/3382/countyRain_Gardens_1_1_.pdf?1413557683)

**Peconic Estuary Program**

<https://www.peconicestuary.org/threats-to-the-peconic/water-quality-overview/water-quality-updates/>

**Long Island Sound Study**

<https://longislandsoundstudy.net/our-vision-and-plan/clean-waters-and-healthy-watersheds/>

**South Shore Estuary Reserve**

[https://www.dos.ny.gov/opd/sser/comprehensive\\_management\\_plan.html](https://www.dos.ny.gov/opd/sser/comprehensive_management_plan.html)

Research and draw a diagram of the water cycle.

Research ways scientists and governments are using to reduce the nitrogen load into ground water and surface waters.

**Check back each week for a new topic! <http://ccesuffolk.org/marine/digitalEd>**

# RAIN GARDENS

*Impacts our local economy and quality of life*

## GLOSSARY

- A) Water quality – Water quality refers to the chemical, physical and biological characteristics of water.
- B) Stormwater runoff- Stormwater runoff is generated when rain flows over land or impervious surfaces and does not seep into the ground.
- C) Filtration– The process that of separation by chemical, physical or a biological process
- D) Aquifer – Rainwater that is underground and trapped between rock and sand particles and used for drinking water or irrigation.
- E) Nitrogen – A natural element found in the air.
- F) Algae bloom – A higher than normal level of algae population in a water body
- G) Rain garden – a garden used to trap rainwater from a building, driveway or parking lot planted with native plants
- H) BMP's– Best Management Practices

