

***Watershed Action Alliance***  
**Test Your Environmental IQ**

1. A watershed includes:

- A. all areas whose rain water runs over land and ends up in a given river or a tributary to that river.
- B. groundwater that discharges into a river or tributary.
- C. lakes and ponds that receive and/or discharge water to a river or a tributary.
- D. all of the above.

2. Over half of the surface water pollution in Massachusetts comes from:

- A. industrial discharges.
- B. excessive pumping of groundwater that feeds rivers and streams.
- C. stormwater runoff.
- D. contaminated sediments below rivers and streams that contain toxic chemicals discharged from factories many decades ago.

3. Most Massachusetts ocean beach closings are due to:

- A. red tide.
- B. bacterial pollution after rain storms.
- C. sharks.
- D. nutrients.

4. The 303(d) list is:

- A. a list of tax exempt organizations, such as watershed associations.
- B. a list of waters that do not meet state water quality standards for one or more pollutants.
- C. a list of rivers and streams where “fish advisories” have been posted, warning people to limit or stop eating certain fish caught in those waters.
- D. a list of pristine waters in Massachusetts.

5. Dams can:

- A. block passage of “anadromous” fish which spend most of their lives at sea but must lay their eggs in fresh water.
- B. significantly raise water temperatures and reduce oxygen, killing off natural river fish such as brook trout.
- C. cost less to remove than to maintain.
- D. all of the above.

6. A “Total Maximum Daily Load” (TMDL) is:

- A. a pollution “budget” that determines how much various pollution sources (such as storm sewer outfalls, factories, and agricultural operations) may discharge into a waterway without violating state water quality standards.
- B. The maximum weight of a given type of fish that commercial fishermen are allowed to catch in a given area on a given day.
- C. the largest amount of untreated sewage discharged on any day to a waterway.
- D. the amount of clothing that may safely be put into a washing machine.

7. Place in order, from largest to smallest, the amounts of water, on average, used for the following domestic activities:

- A. lawn watering
- B. toilets
- C. showers
- D. washing machines

8. Which of the following fish spend most of their life in the ocean but lay their eggs in fresh water.

- A. American eel
- B. shad

- C. blue fish
- D. white suckers.

9. What is the percentage change in funding has occurred over the last four years for the two largest state environmental agencies, the Departments of Environmental Protection and Conservation & Recreation?

- A. +10%
- B. -19%
- C. -24%
- D. -35%

10. In 2001, environmental spending represented 1% of the total state budget. What percentage is it now?

- A. 1.26%
- B. 1.07%
- C. 0.89%
- D. 0.62%
- E.

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## ANSWERS

1. D.
2. C. *Statewide*, stormwater runoff accounts for 52% of our water pollution, according to the state Executive Office of Environmental Affairs, *although the causes of water pollution do vary locally*. All the causes listed in this question play a significant role. (Excessive groundwater pumping increases water pollution by lowering the amount of water in rivers and streams and thus concentrating pollutants.)
3. B. Bacterial pollution gets into beach water from surface stormwater runoff as well as from old, leaky sanitary sewer pipes which take in so much water during storms that there isn't enough room left to carry all its sewage to the treatment plant.
4. C. The 303(d) list also identifies the stream segments and lakes and ponds that have one or more of those pollutants in excess of state standards.
5. D.
6. A. Under the federal Clean Water Act, states are required to produce TMDLs for every pollutant and water body on the 303(d) list (see Q&A 4, above). Few TMDLs have been completed and of those that have, implementation has been very slow. Proposed new US EPA municipal storm sewer rules for waters subject to TMDLs should help, when and if they are finalized.
7. A, lawn watering. *But watering 2 days a week before 8 a.m. or after 6 p.m. (between 4 a.m. and 6 a.m. is even better if you have an automatic sprinkler system) is all that's needed for a healthy, attractive lawn.*

B, toilets. *But using a high efficiency toilet of 1.28 gallons per flush will save both water and energy and thus will save you money. Even a new 1.6 gallon per flush toilet will reduce the amount of water used by more than 50% if it replaces an old 3.5 gallons per flush model.*

D, washing machines. *But front loading washing machines use far less water than top loaders. The best are front loaders with an “energy star” rating of 6.0 or less. According to the MWRA, these machines save more water in a year than the average person drinks in a lifetime.*

C, showers. *But replacing your typical 3 to 7 gallon per minute shower head with a low flow (1.75 gallons per minute) model will save a lot of water. They cost only \$10 to \$20 and are easy to install. You can also save water by limiting your shower time to a length you find reasonable.*

8. B. Shad, as well as alewife and Blueback herring, are so-called “anadromous” fish. American eel live in fresh water but lay their eggs at sea; such fish are called “catadromous”. Blue fish are strictly an ocean species that loves to swim and feed in estuaries. White suckers are fresh water fish.

9. C.

10 D The percentage of the Massachusetts budget spent on the environment is one of the lowest of any state in the country.