

# New Hampshire ENVIROTHON 2010: Current Issue

## *PROTECTION OF GROUNDWATER THROUGH URBAN, AGRICULTURAL AND ENVIRONMENTAL PLANNING*

The written exam at this year's competition will be based on the following learning outcomes. The exam will be primarily short answer questions that students complete as a team.

### **Current Issue Exam Learning Outcomes**

***At the annual state competition students will be able to:***

1. Explain the hydrologic relationship and the environmental benefits of groundwater and surface water.
2. Describe the two greatest users of fresh water in North America and explain why combined use of groundwater and surface water is important to ground water management and optimizing the freshwater supply.
3. Describe where in North America groundwater depletion is occurring at the greatest level and identify areas at risk in the future.
4. Analyze the impact of over pumping of groundwater and justify reasons why land use planning is necessary for groundwater management.
5. Describe ways to measure sustainability with respect to groundwater resources.
6. Appraise the value of groundwater as a component to an integrated regional water management plan, and propose strategies to increase and replenish groundwater supplies.
7. Describe the three major sources of industrial/agricultural pollution to groundwater and explain cleanup options for improving groundwater quality that has been impacted by those sources.
8. Evaluate relationships between energy production and fresh water supplies by: a) comparing and contrasting the impacts on fresh water by nuclear and fossil-fuel powered plants; b) examining the groundwater impacts of increased usage of electric cars; c) describing how the production of biofuels impacts surface and groundwater supplies.
9. Describe some of the ways that climate change affects water supplies. Explain how these effects on water supplies impact both groundwater and energy supplies, and how to adapt or mitigate those effects.