

2020 Current Issue Topic

The host state for the international level of competition in 2020 is Nebraska. They have chosen *“Water Resources Management – Local Control – Local Solutions”*.

Nebraska’s learning objectives include understanding ground and surface water hydrology and availability, as well as economic, social and environmental impacts of water use decisions. It includes topics focused on management decisions that affect competing water users, including local laws that deal with contamination, shortages and user conflicts.

The management of water resources in Missouri differs greatly from that of Nebraska because Missouri has different water source options, receives more precipitation, and has different geology... to name a few reasons. Additionally, water is managed in Nebraska with use restriction regulations, permits, cost-share for water-saving agricultural devices, etc. Missouri does not regulate water use in this way. Water is generally plentiful in Missouri. However, Missouri water resources are managed by the Department of Natural Resources Water Resources Division in order to make sure that water remains plentiful and relatively clean.

For purposes of the Regional and State Envirothon tests in Missouri, the topic will be slightly altered. The Missouri focus will be understanding water hydrology, connectivity, availability of potable water, sources of water pollution, the effects of geology and geography on water availability, and more as listed below.

This is not meant as an all-encompassing study guide, and there is no guarantee that all the questions will be based solely on this list. Often deeper thinking is required for some short essay questions, so some of this information can be deemed “background” information.

The team that advances to the international level, NCF Envirothon, will receive further information related to the Nebraska topic.

Things to know, understand or define for 2020 Envirothon Current Issue Topic

- Groundwater
- Surface Water
- Aquifer
- Hypoxia
- Karst topography
- Porosity
- Permeability
- Hydraulic conductivity
- Who manages Missouri water resources?
- Who owns Missouri water resources?
- Who is a major water user?
- Where does your drinking water come from? (In the region of your Envirothon)
- Types of Aquifers
- Interstate Waters
- States involved in managing the Missouri River Watershed
- Hydrologic Cycle
- Artesian well
- Missouri's fresh water/saline water transition
- Porosity of mineral types
- Point and Nonpoint Sources of Water Pollution
- Animals found in Missouri related to water habitats, including salamander, trout, small and large mouth bass, pallid sturgeon and ducks.
- Significance of floodplains
- Water availability in north vs south counties
- Purpose of stream gages
- Missouri Groundwater Provinces (MODNR Water Resources Center website: Publication WR46)
 - Be able to identify the provinces; and **learn a few facts about the province in which your team will compete.** (see DNR publications mentioned below)

Resource: Groundwater Resources of Missouri – MODNR Publication WR46

Pages to Review:

Executive Summary Pgs. 1-3

Introduction Pg. 5

General Hydrogeology Pgs. 15-17

Hydrologic Cycle Pgs. 23-32

Groundwater Provinces in Missouri Pg. 33

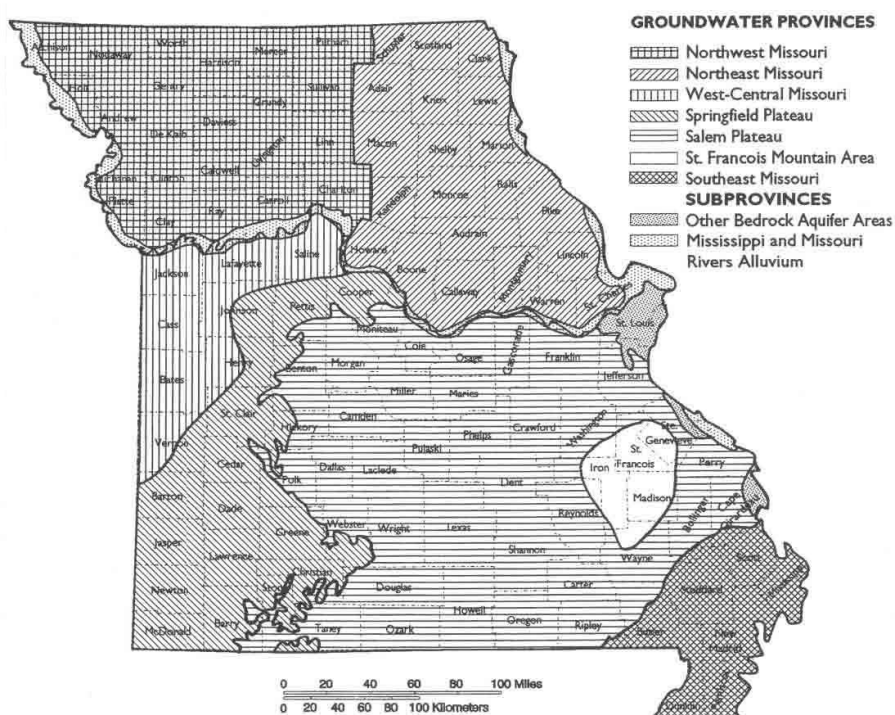
(Teams only need to read the section about the province in which they will be during regional testing. Teams progressing to state competition would want to further study the province in which the state competition will be located): There are Eight Provinces:

- St. Francois Mountains 35-42
- Salem Plateau 42-79
- Springfield Plateau 81-104
- Southeastern Lowlands 109-125
- Northwestern Missouri 153-161
- Northeastern Missouri 163-173
- West-Central Missouri 175-182

NOTE: (A St. Louis area Competition may be in this sub province)

- Sub Province:
Mississippi and Missouri
River Alluvium Pgs. 129-151

Summary and Conclusions Pgs. 201-205



Resource: Surface Water Resources of Missouri – MODNR Publication WR45

Pages to Review:

Executive Summary Pgs. 1-2

Introduction Pgs. 3-4

Physiographic and Geologic Effects on Water Resources Pgs. 11-12

The Hydrologic Cycle Pgs. 14-16

General Surface Water Resources of Missouri Pgs. 25-31

Surface Water Quality Pg. 33

Conclusions Pgs. 117-118

Teams can visit the Missouri Department of Natural Resources **Water Resources Center** website for more information on Missouri water management topics <https://dnr.mo.gov/geology/wrc/>