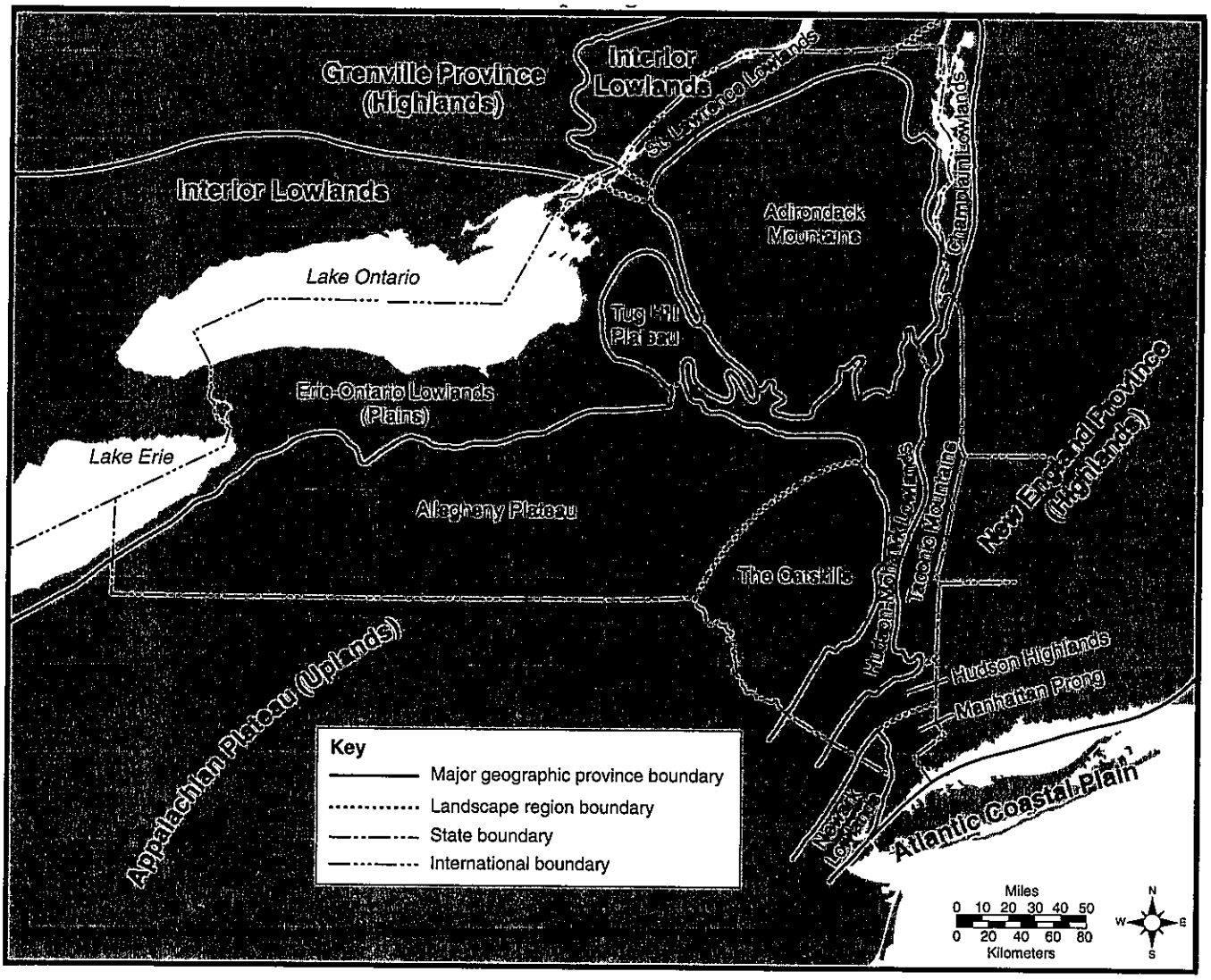
Generalized Landscape Regions of New York State



Overview:

Landscapes are classified as plains, plateaus and mountains. New York State is one of the few states that has all three types. The development of a landscape is based primarily on type of bedrock, climate factors, geologic forces - past and present, and time. It takes thousands or even millions of years to produce a landscape. The Generalized Landscape Regions of NYS chart is often used with the Generalized Bedrock Geology of NYS chart to find related information. This might include rivers, cities, latitude and longitude, or the type and age of the bedrock found in specific landscape regions.

The relief of a landscape refers to the elevation differences found within the specific landscape. Mountainous landscapes normally will have the greatest relief, with plains having the least. As one travels across NYS and is observant, it becomes evident that a change in landscape is easily recognized. This is especially true as one leaves the Atlantic Coastal Plain of Long Island and travels inland to various places within NYS.

The Map:

The map of NYS shows the division lines between the types of landscapes. You need to know why certain areas are classified as a certain type of landscape.

NYS Mountain Landscapes – The bedrock structure in many mountain regions (but not all) will show folded or distorted layers at high elevations. The Generalized Landscape chart shows that NYS has two areas that are classified as mountain regions: the Adirondack Mountains and the Taconic Mountains. Both of these regions are very old and have undergone much erosion. This erosion has produced rounder peaks rather than the sharper pointed peaks normally associated with mountains. The Adirondacks consist of some of the oldest rocks found in North America, being Precambrian in age. Being so old and metamorphic in origin, almost no fossils are found here. The highest peak of NYS, Mt. Marcy, is located within the Adirondacks (see the Bedrock chart). The headwaters of many streams are located in this landscape region, with the Hudson River being the longest river, flowing south pass New York City as it discharges into the Atlantic Ocean.

NYS Plateau Landscapes – The bedrock structure of plateaus will show horizontal strata that have been uplifted to produce the elevation needed to be considered a plateau region. Most people do not realize that NYS has any plateau regions. This is because NYS plateaus have been heavily eroded or dissected by glaciers and rivers, thus producing many large rolling hills with deep valleys. At times this has caused people to mistakenly label certain plateau areas as mountains. The best example of this is the Catskills. The Landscape chart shows that the Catskills are part of the Allegheny Plateau. Even today, the Catskills are referred to as the Catskills Mountains, but their bedrock structure exhibits uplifted horizontal strata - a sure sign of a plateau region.

Notice that the Allegheny Plateau is an extension of the Appalachian Plateau that lies south of NYS. The Allegheny is NYS's largest plateau, consisting of mostly Devonian age rocks. Locate the Tug Hill Plateau and notice its location. This plateau is noted for its large accumulation of snow. As the moist winds travel eastward off Lake Ontario, the air is forced up and over this plateau and becomes colder. This causes the water vapor to condense, creating lake effect snowstorms.

NYS Plain Landscapes – Plains are relatively flat areas that show little relief. Plains that are adjacent to the ocean, are called coastal plains. Inland plains are referred to as interior lowlands. These flat, gentle rolling regions are home to many large cities. Here people have settled next to major rivers or lakes. Extending beyond these cities is fertile farmland produced by the extensive weathering of the landscape bedrock. The Erie-Ontario Lowlands that border Lake Ontario and Lake Erie experience many lake effect snowstorms. Long Island, known as the Atlantic Coastal Plain, geologically was developed by the deposition of great amounts of sediments, transported by glaciers during the ice age. This makes Long Island geologically the youngest landscape region in NYS.

Additional information:

- To arrive at the relief of a landscape, subtract the lowest elevation from the highest elevation found within the specific landscape region. Usually, mountain landscapes have the highest relief, measured in thousands of feet.
- Tectonic plate movements are a dominant force that slowly produces folded mountains. Other types of mountains are: Dome Mountains, Volcanic Mountains and Fault-block Mountains.
- Erosional forces such as glaciers, water, wind, etc., will slowly wear down landscapes. These forces are called destructive forces.
- Other forces, such as plate collisions, volcanic eruption, and even earthquakes, will cause an increase in elevation that could change the landscape over time. These are referred to as constructive forces.
- If the landscape is in dynamic equilibrium, the elevation remains the same. For this to exist, the constructive forces must equal the destructive forces.

Set 1 — Generalized Landscape Regions of New York State

1. In which New York State landscape region is Niagara Falls located?

   (1) Tug Hill Plateau
   (2) St. Lawrence Lowlands
   (3) Allegheny Plateau
   (4) Erie-Ontario Lowlands 1_____

2. Which sequence shows the order in which landscape regions are crossed as an airplane flies in a straight course from Albany, New York, to Massena, New York?

   (1) plateau → plain → mountain
   (2) plateau → mountain → plain
   (3) plain → mountain → plain
   (4) mountain → plain → plateau

   2_____

3. The table below shows characteristics of three landscape regions, *X*, *Y*, and *Z*. Which terms, when substituted for *X*, *Y*, and *Z*, best complete the table?

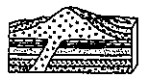
Landscape Region	Relief	Bedrock
X	Great relief, high peaks, deep valleys	Many types, including igneous and metamorphic rocks, nonhorizontal structure
Y	Moderate to high relief	Flat layers of sedimentary rock or lava flows
Z	Very little relief, low elevations	Many types and structures

   (1) *X* = mountains, *Y* = plains, *Z* = plateaus
   (2) *X* = plateaus, *Y* = mountains, *Z* = plains
   (3) *X* = plains, *Y* = plateaus, *Z* = mountains
   (4) *X* = mountains, *Y* = plateaus, *Z* = plains 3_____

4. Which characteristics best distinguish one landscape region from another?

(1) human population density and types of environmental pollutants
(2) composition of bedrock and variety of fossils
(3) bedrock structure and elevation of land surfaces
(4) stream gradients and soil types 4_____

5. Which cross section best represents the general bedrock structure of New York State's Allegheny Plateau?


(1)


(3)


(2)

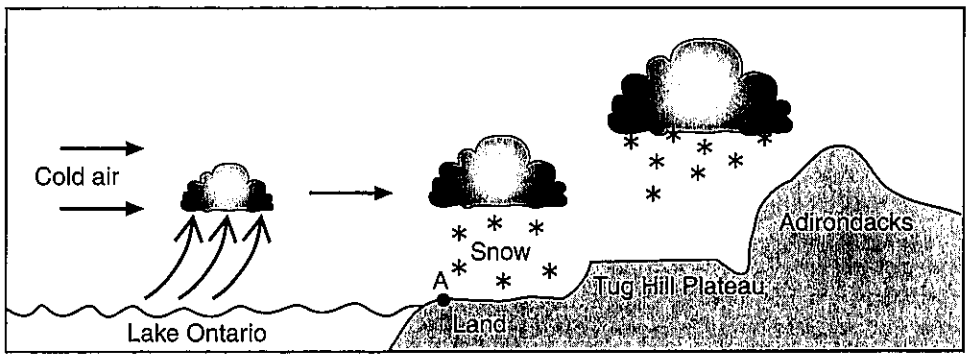

(4) 5_____

6. Which New York State landscape region is composed mainly of metamorphosed surface bedrock?

(1) Taconic Mountains
(2) Allegheny Plateau
(3) Atlantic Coastal Plain
(4) Erie-Ontario Lowlands 6_____

7. Which New York State landscape region is located at 42° N 75° W? (See page 51)

(1) Erie-Ontario Lowlands
(2) the Catskills
(3) Hudson-Mohawk Lowlands
(4) Tug Hill Plateau 7_____



8. State the name of the New York State landscape region that includes location *A* shown in the diagram.

_____

9. State why very heavy snowfall occurs in the Tug Hill Plateau region.

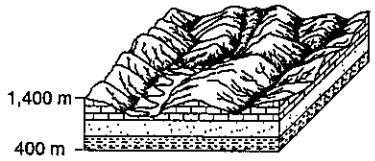
_____

_____

10. Which two locations are in the same New York State landscape region?

(1) Albany and Old Forge
(2) Binghamton and New York City
(3) Massena and Mt. Marcy
(4) Jamestown and Ithaca 10_____

11. The diagram below shows a cross section of a portion of Earth's crust. Altitude is shown in meters above sea level. This landscape region is best classified as an eroded



(1) plain (3) domed mountain
(2) plateau (4) folded lowland
11_____

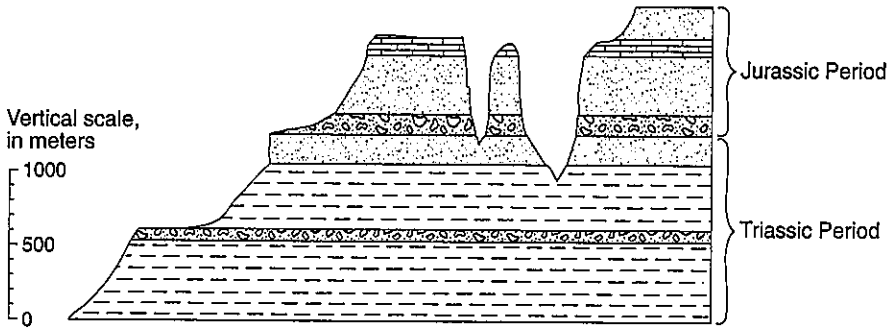
12. The Catskills would best be described as

(1) dissected plateau
(2) mountains with folded layers
(3) volcanic in origin
(4) part of the Hudson-Mohawk Lowlands 12_____

13. The Erie-Ontario Lowlands of New York State are a part of which larger landscape region?

(1) Interior Lowlands
(2) St. Lawrence Lowlands
(3) Allegheny Plateau
(4) Appalachian Plateau 13_____

Base your answers to question 14 on the geologic cross section shown below and on your knowledge of Earth science. The cross section shows the surface of a landscape region in the southwestern United States and indicates the age, type, and thickness of the bedrock.



14. State *two* characteristics shown in the cross section that supports the idea that this region is correctly classified as a plateau landscape.

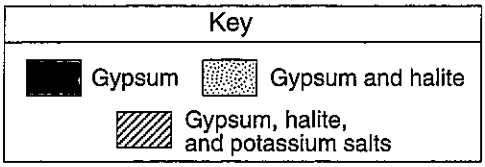
1)_____

2)_____

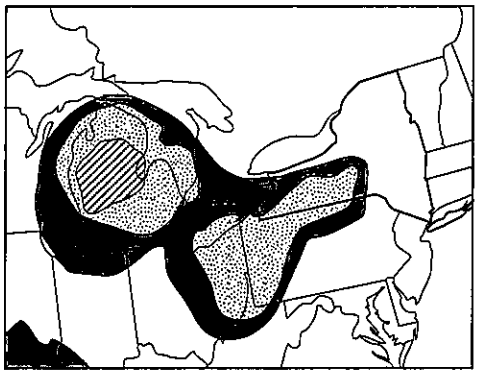
15. Give the landscapes that the Genesee river flows over.

_____

Base your answers to question 16 on the map below. The map shows the approximate area in a portion of North America where some sedimentary rock layers composed of gypsum, halite, and potassium salt minerals are found in Earth's crust.



Mineral Deposits



16. Identify one New York State landscape region in which deposits of gypsum and halite are commonly found.

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17. New York State's Adirondacks are classified as a mountain landscape region. Describe one bedrock characteristic and one land surface characteristic that were used to classify the Adirondacks as a mountain landscape region.

Bedrock characteristic _____

Land Surface characteristic _____

18. Part of which generalized New York State landscape region is drained by the Susquehanna River and its tributaries?

_____

Base your answers to questions 19 on the passage below.

Asbestos

Asbestos is a general name given to the fibrous varieties of six naturally occurring minerals used in commercial products. Most asbestos minerals are no longer mined due to the discovery during the 1970s that long-term exposure to high concentrations of their long, stiff fibers leads to health problems. Workers who produce or handle asbestos products are most at risk, since inhaling high concentrations of airborne fibers allows the asbestos particles to become trapped in the workers' lungs. Chrysotile is a variety of asbestos that is still mined because it has short, soft, flexible fibers that do not pose the same health threat.

19. Chrysotile is found with other minerals in New York State mines located near 44° 30' N, 74° W. In which New York State landscape region are these mines located? (See page 51)