# Activity: Major Winter Snowstorm

## Introduction

"The "Blizzard of '96" will rank as one of the most significant snowstorms of the 20th century since many of the largest population centers within the Northeast urban corridor were buried under more than 20 in. (50 cm) of snow. This was the most significant storm during the snowiest winter of the 20th century for much of the area from Virginia through southern New England." [Kocin and Uccellini, p. 599]

Two smaller snowstorms followed the Blizzard and finally rain and milder weather in later January led to severe flooding in New York, Pennsylvania and Maryland. This was an extreme example of winter weather hazards.

Paul Kocin and Louis Uccellini of the National Oceanic and Atmospheric Administration (NOAA) have developed the Northeast Snowfall Impact Scale (NESIS) to compare snow storms based on their societal impacts. This included the area covered by varying depth of snow and also the number of people in the region that were affected. These NESIS values are then scaled into categories from 1–5 to be comparable with the impact scales associated with hurricanes and tornadoes.

After completing this exercise, you should be able to:

- analyze the snowfall pattern of a winter storm.
- track the path of the cyclone.
- determine the relationship between the major storm and corresponding hazardous weather it produced.

## Activity

1. On the snowfall map provided from NESIS, the snowfall amounts are given in inches for the *shaded categories* according to the scale on the right for the Category 5 snow storm of January 6-8, 1996. The red shading indicates areas where snowfall amounts were **[(*1-4 in.*)(*4-10 in.*)(*10-20 in.*)(*20-30 in.*)(*30 in. or more*)]**.

Observe the shaded category boundaries. Also note the amount of change in the snowfall between locations that are very close together. (Remember those times when the weather forecast was for heavy snowfall and there was barely a light dusting? Perhaps the snow was quite heavy only a few tens of miles away!)

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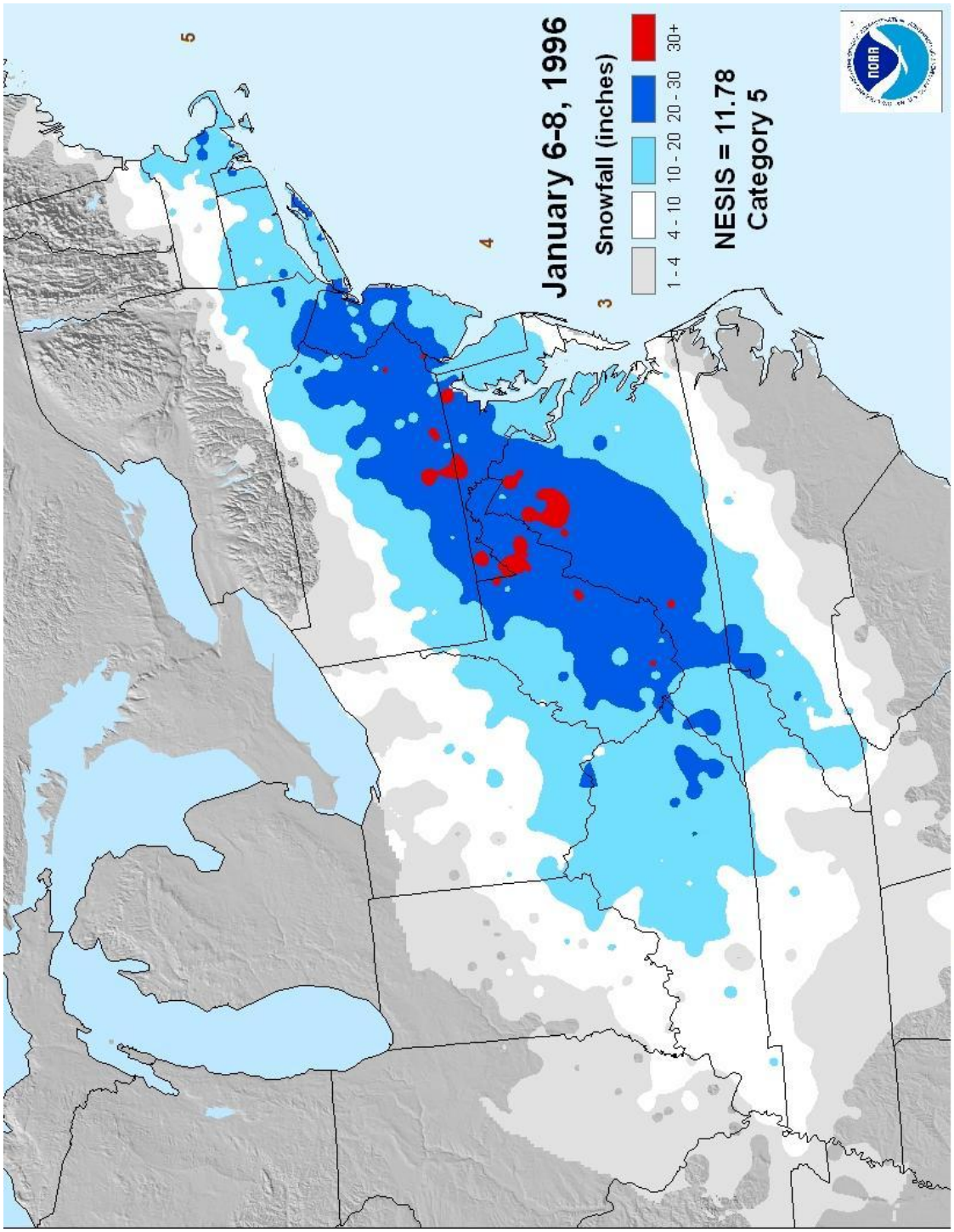
January 6-8, 1996
Snowfall (inches)
1 - 4
4 - 10
10 - 20
20 - 30
30+
NESIS = 11.78
Category 5
NOAA
1
2
3
4
5

2. The table below indicates generally where the centers of lowest atmospheric pressure were at the times listed.

| Plot Number | Time/Day |
|---|---|
| 1 | 00Z 1/7 |
| 2 | 12Z 1/7 |
| 3 | 00Z 1/8 |
| 4 | 12Z 1/8 |
| 5 | 00Z 1/9 |

   At the position numbers (in brown) labeled on the snowfall map, place a bold (**L**) and label its time and day beneath the L. Connect the Ls with a dashed curve from earliest (western most location) to latest (eastern most). Your dashed curved represents the storm's track.

3. What relationship do you note between the track of the cyclone center and the heaviest snowfall? Why would you expect this relationship to occur? (Keep in mind the necessary conditions for snow to occur.)

Ref: Kocin, Paul J. and Louis W. Uccellini, *Northeast Snowstorms*, Am. Meteor. Soc., Boston, 2004, Vol. I, II, 818 pp.