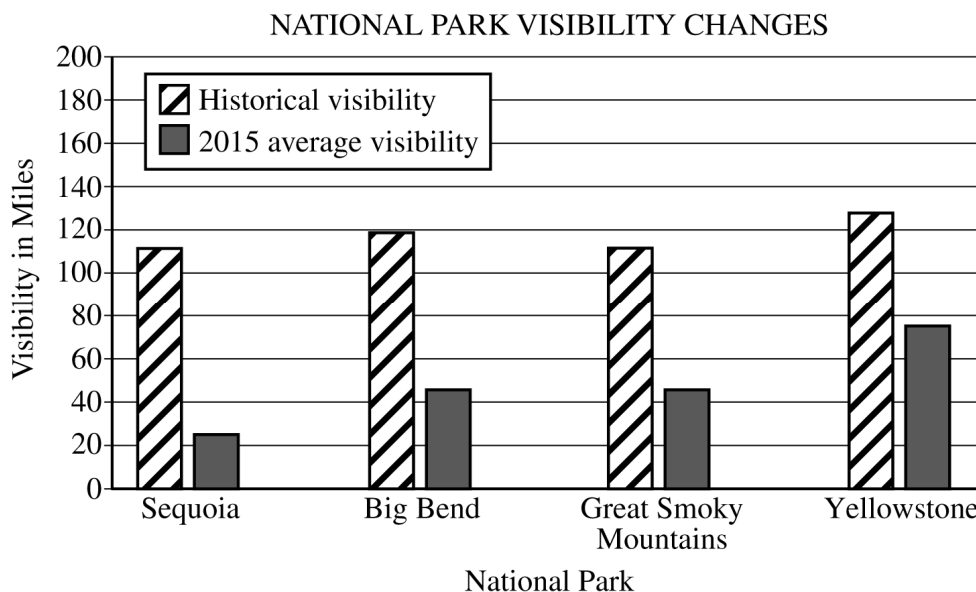


4. One reason that people visit national parks is to view the scenery. Visibility at the four parks in the graph has been reduced over time so that by 2015 the visibility was an average of 70 miles less than the historical visibility. Regional air pollutant sources are commonly located over 100 miles away from national parks.



- (a) Based on the data provided in the graph, **identify** the national park that had the greatest loss of visibility as of 2015 when compared with the historical natural visibility.
- (b) Visibility in national parks can be affected by many different air pollutants.
- (i) **Identify** a primary air pollutant.
 - (ii) **Describe** how a primary air pollutant becomes part of the atmosphere.
 - (iii) **Identify** a secondary air pollutant.
 - (iv) **Describe** how a secondary air pollutant is formed within the atmosphere.
- (c) In 1990 Great Smoky Mountains National Park had a visibility of 25 miles. Visibility data for 2015 can be determined from the graph above.
- (i) **Calculate** the percentage increase in visibility from 1990 to 2015.
 - (ii) **Discuss** TWO specific actions that the state or federal government could take or encourage to further improve the visibility in Great Smoky Mountains National Park.
- (d) Excluding air pollution, **discuss** TWO additional ways national park ecosystems are being degraded by high levels of visitor use.

STOP

END OF EXAM