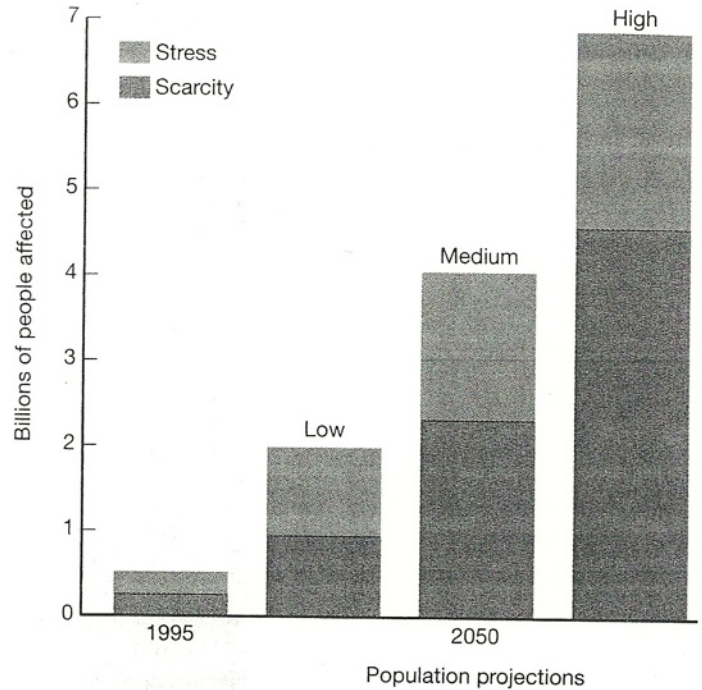


## Data Analysis: Graphing Global Water Stress and Scarcity

One definition of water stress is when annual water supplies drop below  $1,700 \text{ m}^3$  per person. Water scarcity is defined as annual water supplies below  $1,000 \text{ m}^3$  per person. More than 2.8 billion people in 48 countries will face either water stress or scarcity conditions by 2025. Of these countries, 40 are expected to be in West Asia or Africa. By 2050, far more people could be facing water shortages, depending both on population projections and scenarios for water supplies based on global warming and consumption patterns. The graph shows an estimate for water stress and scarcity in 1995 together with three possible scenarios (high, medium, and low population projections) for 2050. You'll remember from chapter 7 that according to the 2004 UN population revision, the low projection for 2050 is about 7.6 billion, the medium projection is 8.9 billion, and the high projection is 10.6 billion.

1. What combined numbers of people could experience water stress and scarcity under the low, medium, and high scenarios in 2050?
2. What proportion (percentage) of 7.6 billion, 8.9 billion, and 10.6 billion would this be?
3. How does the percentage of the population in these two categories vary in the three estimates?
4. Why is the proportion of people in the scarce category so much larger in the high projection?
5. How many liters are in  $1,000 \text{ m}^3$ ? How many gallons?
6. How does  $1,000 \text{ m}^3$  compare to the annual consumption by the average family of four in the United States? (Hint: Look at table 17.1 and the table of units of measurement conversions at the end of this book).
7. Why isn't the United States (as a whole) considered to be water stressed?



Global water stress and scarcity

**For Additional Help in Studying This Chapter**, please visit our website at [www.mhhe.com/cunningham11e](http://www.mhhe.com/cunningham11e). You will find additional practice quizzes and case studies, flashcards, regional examples, place markers for Google Earth™ mapping, and an extensive reading list, all of which will help you learn environmental science.