33 a) Forest fires are caused by several types of human activity, including

- campers not extinguishing campfires;
- careless smoking;
- out-of-control grass fires from spring clean-up;
- overturned vehicles that ignite;
- sparks from railway wheels;
- careless use of welding equipment in mining areas;
- fires deliberately set by arsonists.

These fires often occur close to areas where fire-fighting teams can be notified and dispatched quickly.

When lightening strikes, it is frequently in a more remote area where fire crews are not able to respond as quickly.

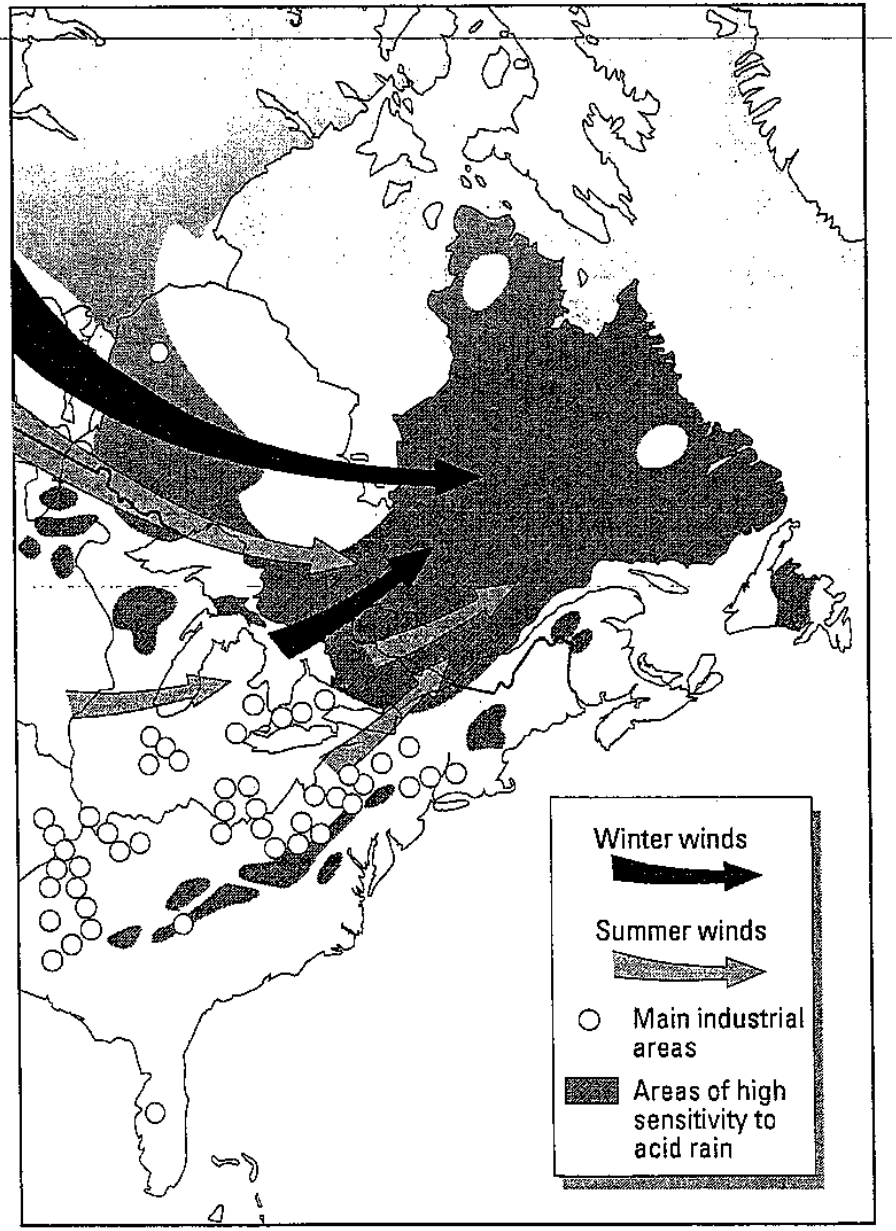
b) We can reduce the amount of timber lost to fires by

- improving public education and awareness programs;
- setting restrictions on fires used by recreationalists and residents;
- implementing stricter regulations on equipment used in forests;
- improving forest fire surveillance (e.g., aircraft with infrared scanners);
- investing more money in fighting forest fires (equipment, firefighters);
- expanding forest inventory data to cover factors related to spreading and intensity of fire, etc.

34 Fighting fires is extremely expensive. Fires in remote areas do not endanger human settlements or commercial forests. Also, fires are a natural part of the forest ecosystem, aiding in the regeneration of certain species of trees.

35 a) Southern Ontario and Quebec receive large amounts of acid precipitation. (Figure 9-7 illustrates the movement of acid rain.) In these areas forests show evidence of reduced growth. Several parts of the trees are damaged, including the leaves, roots, and new seeds, which affects future germination. Trees appear to grow more slowly in conditions created by acid rain. Some species such as the sugar maple are more adversely affected than others. The NFB video *Trouble in the Forest* looks at this problem in detail.

Figure 9-7
The movement of acid rain



Source: Adapted from *Gaia: An Atlas of Planet Management* (New York: Anchor Books,

b) The exact way in which acid rain is threatening forests is still unclear. Some scientist believe it has a direct effect on forests; others say that it destroys only those trees that are already weakened by other factors such as old age, disease, insects, and thin soils.