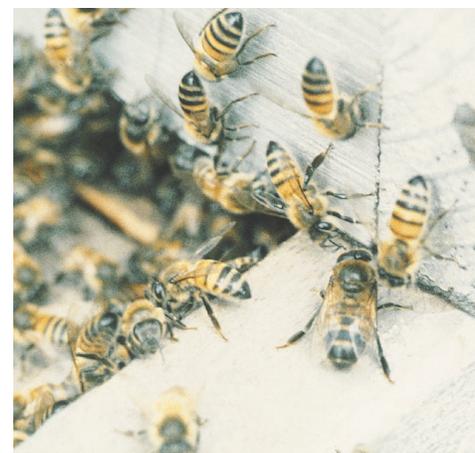


**Table 3** Selected Invading Species

Purple loosestrife ( <i>Lythrum salicaria</i> )	A tall perennial herb that grows in wet or moist habitats, it is commonly found along roadside ditches, swamps, marshes, and in open meadows. Its widespread presence has altered aquatic ecosystems in North America and interfered with interactions among many native aquatic species.
African killer bees ( <b>Figure 17</b> )	Imported intentionally to Brazil from Africa by beekeepers for their high honey production, these aggressive bees sting at the slightest provocation. They attack in larger numbers and much faster than the common honeybee. In some instances, humans have died from these bee stings. Aside from public safety, African killer bees have a significant economic impact on commercial beekeepers and food production.
West Nile virus	By 2001, more than 150 dead birds had tested positive for the West Nile virus. The virus, detected in wildlife populations throughout North America, was first identified in the West Nile region of Uganda in 1937. It can be transmitted to humans by three species of mosquitoes: <i>Culex pipiens</i> (the common household mosquito), <i>Aedes vexans</i> (an indiscriminate feeder) and <i>A. japonicus</i> . It is responsible for serious wildlife population losses in many parts of the world. The virus is believed to have been accidentally introduced to North America in an exotic frog species. It is notable that a species of bird and mosquito, both involved in the transmission of this virus, were also introduced as exotic species.

**Figure 17**

Some African killer bees escaped from Brazilian beekeeping operations and have spread accidentally into North America

### ► EXPLORE an issue

#### Profile of an Exotic Invader

Environment Canada has issued an alert on the invasion of foreign species. You have been hired to research information regarding one of these foreign species and its potential effects on Canada.

- Research and select a foreign species with potential negative impact.
- Investigate the effects of this species on ecosystems throughout Canada.
  - (a) Identify specific effects it has on interspecific interactions (such as competition and predation).

#### Decision-Making Skills

- Define the Issue
- Analyze the Issue
- Research
- Defend the Position
- Identify Alternatives
- Evaluate

- (b) Describe the current and potential economic and health effects resulting from the introduction of this species.
- (c) Outline strategies and/or technologies proposed as potential solutions to deal with the invasion.
- (d) Prepare a one-page press release to be delivered to the Canadian public informing them about vital information regarding the foreign species.

The complex interactions among interdependent species of a community are subtle yet essential for sustaining biodiversity. Often, the intricacies of these complex interactions are revealed only when conditions in ecosystems deteriorate. Disruption of such interactions can pose serious threats to the ecosystem and the species that inhabit it. Humans are by no means exempt from interventions into biological interactions. As human populations expand, their activities affect ecological communities and, increasingly, their own.

## SUMMARY

### Population Interactions Within Communities

- Many different kinds of interactions occur among and between species that affect population growth.
- The population dynamics of predator–prey interactions are affected by a wide range of factors. Both predators and prey have evolved diverse adaptations that enhance survival.