

Migration is an adaptation for avoiding the worst and enjoying the best of tundra environments.

Many birds, mammals, and fish enjoy the summer riches of the tundra and then avoid the winter by migrating to milder locations. The seasonal movements of large numbers of animals into and out of tundra environments are among the most spectacular natural events in the world.

Each spring, huge flocks of shorebirds and waterfowl rush toward the tundra. Areas with no visible life suddenly come alive with the movements and calls of arriving migrants. As soon as enough snow melts, these birds spread over the tundra in low densities to nest. When they and their young gather before hurrying south, the surprising productivity of the tundra is once again revealed.

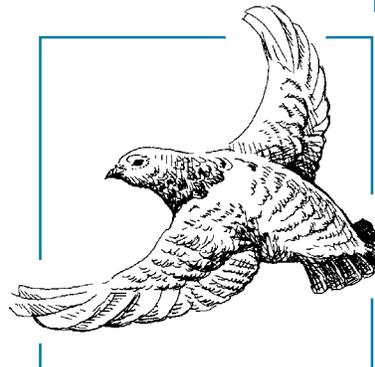
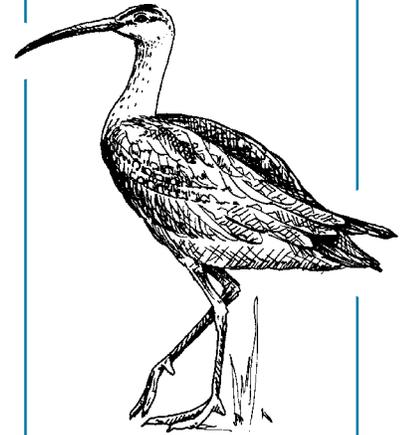
The gathering places of migrants, called *staging areas*, are fixed locations where food is abundant so the migrants can fuel up for their long travels. Some migrant birds nearly double their weight with layers of fat before leaving.

Many birds travel thousands of miles to wintering areas in Central and South America or Polynesia. Some birds such as ptarmigan migrate relatively short distances. They move south out of arctic tundra areas and down slope from high alpine areas to low alpine or forested areas in the interior of Alaska.

The migration of caribou between tundra areas and **taiga** or forest environments is one of the best known examples of migration by mammals. Caribou come to the tundra to give birth to their calves just as the tundra plants become most nutritious.

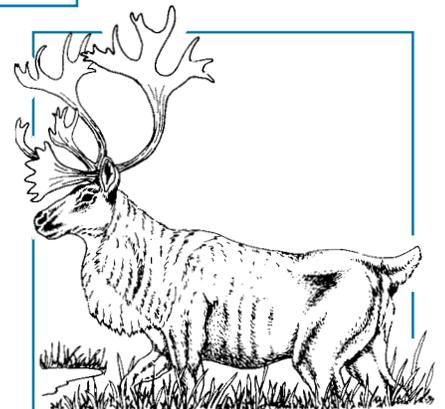
Many tundra fish also migrate. In fall, they move into places where the water will not freeze solidly. Deep lakes, deep channels in large rivers, and spring-fed streams are important winter habitats for tundra fish.

Whimbrels nest in tundra but migrate to spend the winter on the Pacific coast from California to Chile. Most shorebirds migrate thousands of miles to return to the tundra from southern wintering areas.



Ptarmigan migrate out of the northernmost tundra regions to winter in the low alpine tundra and forests of central Alaska.

Caribou migrate out of tundra areas to winter in taiga and forests.



Tundra fish, such as arctic char, migrate to places where some water remains liquid throughout winter.

