



*International
Migratory Bird
Day (IMBD),
held annually
on the second
Saturday in
May, is an
invitation to
celebrate and
support
migratory bird
conservation.*

IMBD Information
web <http://birds.fws.gov/imbd.html>
phone 703/358-2318

IMBD Sales
web <http://www.BirdDay.org>
phone 1-866/334-3330

January 2002

The Four Essential Elements of Habitat

Food, Water, Cover, Space

Critical for Survival

All species of plants and animals—including people—need a proper combination of food, water, cover, and space to survive and reproduce. Together, these elements make up a “habitat.” Without habitat, a species cannot survive.

Since bird species are wonderfully diverse in their forms and lifestyles, their habitats vary tremendously. However, regardless of location, be it sandy seashore, tropical forest, arid grassland, or urban neighborhood, a habitat must fulfill the four essential needs.

- **Food.** Some species of birds are herbivores, eating seeds, fruits, buds, or flowers. Some are carnivores, eating insects, snails, fish, other birds, or carrion. Many species are omnivores, eating both plant and animal matter. A bird’s bill shape and size offer excellent clues to the bird’s diet.

The type of food that a bird selects depends on availability, and during periods of abundance (for example, during a spring fish spawning or fall fruiting) its diet may become very repetitive. A bird’s diet also depends on its nutritional requirements, which change with season and age. Breeding adults and developing chicks need additional protein, for example. Birds that eat plant matter much of the year, such as the American Tree Sparrow, will turn to insects to fulfill that need. Birds undertaking strenuous migrations will

increase and alter their diets prior to their journeys in order to accumulate large amounts of energy in the form of fat. As an extreme example, the Blackpoll Warbler doubles its body weight prior to migration!

- **Water.** Birds, like all living things, require water. Most birds obtain water by drinking—dipping with their bills and tipping their heads back to swallow. Pelicans have been seen standing with their mouths open in the rain. Sea-going birds, such as albatross, can drink saltwater because of specialized nasal glands that extract excess salt from the blood. However, species with very moist diets, such as hummingbirds and other nectar-feeders, obtain water almost completely from their food, and in very arid regions, some species also rely on metabolic water, produced as their bodies burn fat.

Water can also be essential as a medium for feeding and other activities. Herons wade, puffins dive, ducks dabble, and gulls skim the water in search of aquatic foods. Many birds stay on the water to rest, court, and preen. In fact, pelagic (oceanic) species spend most of their time out at sea, returning to land only to nest.



Birds Need

- **Cover.** Birds, nestlings in particular, need shelter from predators and the elements. Cover, including trees, grasses, and rocks, also harbors foods for birds and provides space or materials for nesting. The requirements for cover can be quite specific. Species often show a marked preference for nesting and foraging at certain heights and in certain structures of vegetation. Cavity nesters, such as woodpeckers, require trees of the age and size to support suitable holes.

A bird's needs may also change over time. Open meadows and grasslands provide good cover for wild turkey chicks; as adults, turkeys can better avoid predators in areas with mature trees and little underbrush. Some birds prefer no cover. Nesting terns require sandy stretches of beach nearly devoid of vegetation and use their bodies to shelter their eggs and chicks.

- **Space.** Birds simply need the room to find food, water, and cover. The amount of space needed depends largely on the availability of these elements. For example, hawks and other raptors require more acreage for hunting when the abundance of prey decreases. The need for space also mirrors the social habits of the species. In winter, Dark-eyed Juncos flock together, but on their breeding grounds, these birds disperse and defend territories.

Most species of birds space themselves out for breeding, with males or breeding pairs defending their territory. In contrast, one-eighth of all bird species nest in colonies, including swallows, herons, gulls, and cormorants, and a large number of young may be produced in a small area. However, although a nesting colony occupies less space than if nests were widely dispersed, the birds often require large areas nearby in which to find food.



Multiple Habitats for Migratory Birds

Birds that migrate spend part of their time in one habitat, and move to another to breed. In addition to wintering and breeding habitat, these birds require stopover areas along their migration routes. These habitats may be strikingly different, depending on the seasonal needs of the birds. The White-rumped Sandpiper, for example, spends the winter on beaches in Argentina, hopscoches from wetland to wetland across the Americas, and nests on the mossy or grassy tundra of the high Arctic. Because migratory species use multiple areas, these species and their habitats deserve our particular attention.

Conserving Quantity and Quality

Unfortunately, human activities and development often result in the loss of bird habitat. An area covered with buildings or pavement simply cannot provide the food, water, cover, and space that birds need. To preserve healthy bird populations, we must strike a balance between our own habitat needs and those of other species. With some birds, people can establish conditions that allow for cohabitation, such as green spaces in their neighborhoods and cities. In other cases, the long-term survival of a species requires that people set aside areas from development and disturbance.

People concerned about birds must also protect habitat quality. Good bird habitat must not only provide food, water, cover and space, but must be free from significant hazards. Birds face numerous threats from human activity, including poisoning by pesticides and pollutants, entanglement in fishing nets and lines, collisions with structures and vehicles, and attacks by introduced predators such as cats. People must work to reduce or eliminate these hazards in order to allow habitat to serve its function of providing for a species' survival.