

## Why Birds Flock

By Celeste Silling

Why do birds flock together? For centuries, humans have wondered how and why birds move in coordinated groups across huge distances. We know now that there are many advantages to flocking and various species get various benefits depending on how they flock. Flocking helps birds notice and defend against predators, as they can all look in different directions to see threats. In addition, if a predator should come upon a flock, it can be distracted and confused by the swirling bodies and have a more difficult time picking out a single prey bird to target.

Some species flock in formations that give them special benefits. Geese fly in a V formation that enables them to spend less energy flying across long distances. When the bird at the front of the V flaps its wings, the bird behind it benefits from the updraft that it creates, similar to the wake following behind a boat. Each bird in turn creates its own wake, making it easier and easier for the birds behind to fly.

If a goose drops out of the V, it will feel the full impact of the air, encouraging it to get back in the formation. In this way, geese know that it is better to flock together, especially those that are weaker or smaller. When a sick or injured goose has to leave the formation, another goose will often follow and stay with it until it either dies or gets better.

Stronger and larger geese will tend to take the lead of the V formation, but they don't always remain in the front for the whole journey. When the leader grows tired, it will rotate back to an arm of the V and a new leader will take its place. The leaders will also sometimes switch places when the flock needs to change direction.

In other species, flocks have a more complex dynamic. Starlings, for example, can flock in huge, tightly connected masses called murmurations. These murmurations appear chaotic and synchronized at once, moving erratically but as one. Researchers have discovered that starlings in murmurations coordinate



White Ibis flocking in a V formation. Photo credit: Tony Leukering

with the seven closest birds around them. This number can change depending on the size and shape of the flock, but seven seems to be the most effective and common number.

By looking at only the birds nearest to themselves, starlings can send waves of information through the flock. If a bird on the edge sees a predator and moves away from it, it will only take seconds before the birds on the other side of the group know to move in that direction too without ever having seen the predator for themselves.

Flocking is so advantageous that birds of a different feather often opt to flock together. As with single-species flocks, mixed-species flocks allow birds to keep many eyes and ears out for predators and prey, but there are some added benefits too. With a mixture of species comes a mixture of special abilities.

For example, when Red-eyed Vireos, who are nearsighted, flock with Yellow-margined Flycatchers, who are farsighted, the group as a whole can see predators at any distance. The combination of different senses, hunting abilities, and other specialized characteristics can give the group a huge advantage when migrating across great distances.

When it comes to flocking, the sum is certainly greater than its parts, which is why so many birds can be seen doing it.