

Nature Notes 23:

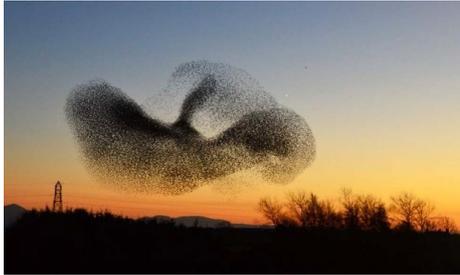
Why do Birds Flock and Why do Some Species Form Murmurations?

By Mark Hassall

Looking down from the path that runs along the ridge north of Woodlands farm I noticed a large flock of dark grey birds feeding on the ground in the field below. Periodically they rose up and flew round, swirling and twisting in a perfectly synchronized flock (known as a murmuration) before alighting again. It was a flock of starlings. At this time of year in the evening skies above Rome, hundreds of thousands of starlings form spectacular murmurations as they return to roost from the surrounding countryside. Seeing flocks of tens of



Looking south over Swannington



Murmuration of Starlings (Pinterest)

thousands of birds flying in perfect synchrony is an amazing sight but it raises two questions: why do birds flock and why do some perform such spectacularly synchronized murmurations?

Some birds never flock, instead they feed alone throughout their lives (e.g. woodpeckers and owls) in contrast to starlings and waders which can come together in flocks of tens of thousands. There are costs and benefits to both strategies. Solitary individuals, having found a particularly profitable patch of food, do not have to put up with hungry fellow flock members grabbing some of their goodies.

Competition can be more subtle than this. Out on the mudflats at low tide, larger waders such as curlews and oystercatchers, which feed on worms, shellfish or crabs (all sensitive to vibrations e.g. from the footfalls of a bird) are very aggressive to other large individuals feeding within 20-30 metres. They hunch their bodies, stretch out their necks, point their beaks at the intruder and charge towards it, often emitting a loud “battle cry”. As the incoming tide covers the mudflats, they run from the advancing water’s edge, coming closer together to form flocks which coalesce into bigger flocks and then fly off to roost shoulder to shoulder in huge flocks.



Dense flock of roosting oystercatchers (Simon Stirrup)

The biggest and most spectacular murmurations in the UK are only 45 miles from Swannington. When the highest spring tides push hundreds of thousands of waders off the wash mudflats, they form massive flocks which at a distance look like columns of smoke or dark clouds, constantly changing shape, swirling, twisting, turning, flying vertically up then pouring down, always in perfect synchrony.

So what are the advantages of flocking? Flocking can reduce the risk of becoming a juicy meal for a predator for two reasons. “The many eyes hypothesis” postulates that if in a flock with lots of other individuals, there is much more chance of a predator being spotted by another member of the flock and the alarm being raised in time to take avoiding action than if feeding alone, head down, concentrating on the next bite of food.

Secondly the “safety in numbers” hypothesis is that if you are in a flock of a thousand there is a 99.9% chance that a predator will take one of the other members of the flock. In contrast, if feeding alone, the chance of ending up as meal for a hungry predator is far higher.



Waders (knots) in a murmuration (blogspot.com)

So why form murmurations when flying is so energetically expensive? Have you ever been to a fair ground and tried to aim an air gun at the targets? Targets that are moving are much harder to hit. Imagine how much harder still it is when a whole flock of targets mercurially twists and turns apparently at random. One last question: as Homo sapiens is the ultimate top predator on the planet, why do so many humans live in such huge “flocks” in cities? Clearly not to avoid being eaten! Answers to the editors please. Maximum brownie points for creativity.