



ScienceWatch – The Impact of Backyard Feeders

“Our study shows that birds that receive extra food over the winter lay their eggs earlier and produce more fledglings.”

It is estimated that household feeders in the US and UK combined, provide over half a million tons of food for backyard birds each year. Common sense tells us that such a huge subsidy should help sustain birds during the winter, but no one has documented the benefit of winter feeding on subsequent breeding success.

In a study published in the April 23, 2008 issue of *Biology Letters*, Gillian Robb, Queen’s University, Belfast, UK, Stuart Bearhop, University of Exeter, Penryn, UK and others, show that feeding a common backyard UK bird, the blue tit (*Cyanistes caeruleus*), in winter has a carry-over effect into the subsequent breeding season.

The team chose 10 deciduous woodland sites around County Down, Northern Ireland. Each site of about 12 hectares (30 acres) was paired with one similar in woodland and under story composition to yield 5 pairs, and then randomly assigned to fed or unfed treatments. Feeding began November 1, 2005 and stopped March 8, 2006, six weeks before the first recorded laying date. Each fed site contained one wire mesh feeder with peanuts, a common feeder food, per hectare (2.5 acres).



All sites were at least 3.5 km (2.0 miles) apart, and birds tagged at both fed and unfed sites were never observed to move between sites. During the prior year nesting boxes were set up at a density of three per hectare and inspection the following spring showed that 85% were occupied by blue tits. Breeding success was monitored by searching nest boxes and recording the date the first egg was laid. At the end of the breeding season nest boxes were checked for unhatched eggs and dead chicks to calculate the percentage of each brood that was successfully fledged. Fed sites contained 45 nests in total, unfed sites contained 31 nests.

Once the team compiled all their data, they found that blue tits at fed sites began laying eggs 2.5 days earlier, on average, than those at unfed sites. Additionally, even though clutch sizes between the two groups did not significantly differ, birds with extra winter feed managed to fledge one extra chick, on average. It is not known whether earlier lay time was due to the general availability of extra food yielding healthier females or that the females used the extra food availability as a cue for breeding.

Peanuts not only provide carbohydrates, fat and protein, they also contain micronutrients like vitamin E, an antioxidant. The authors surmise that female birds with extra antioxidants could likely pass them on to their eggs, and chicks hatched from eggs with higher antioxidant levels have lower mortality rates. The team plans to look at

antioxidant levels in the future. They also note that the study shows a marked beneficial impact on birds living in close association with humans, but while these birds may benefit, summer migrants may face increased competition from birds that are more robust after receiving winter handouts.

According to Bearhop, “while this research shows how the extra food we provide in winter helps the birds that take it, it is still unclear whether this has a knock-on effect on other species. This is something we are keen to investigate, but in the meantime I will certainly be putting out food for garden birds for the rest of the winter.”

Perhaps you should do the same.