

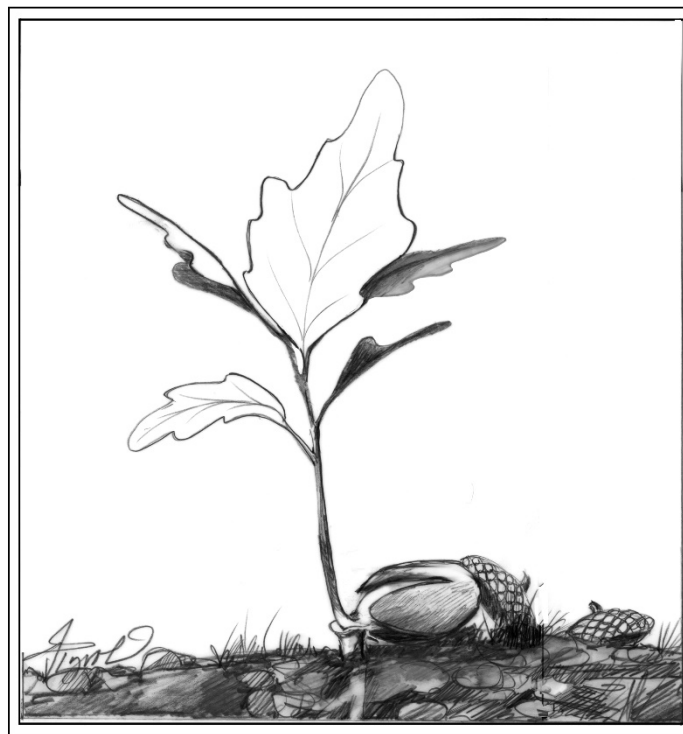
The Outside Story

The Humble Acorn: A Feast for Wildlife

By Laurie D. Morrissey

In a big mast year for oak trees, it seems like there's a constant barrage of acorns thwacking roofs, parked cars, and – sometimes – unsuspecting humans. These falling nuts can seem a nuisance. But when I look closely at a little acorn with its tidy hat and imagine its future, I'm reminded of what a miraculous object it is.

The acorn is a perfectly designed container packed with potential. It holds the seed that may become a towering tree that will shelter and feed thousands of creatures throughout its lifetime – including many animals that rely on acorns for winter survival. The tree's trunk could one day become part of a timber-frame home, or it may provide fuel for a woodstove in the 22nd century.



Oak species are divided into two groups: white oaks or black (sometimes referred to as red) oaks. In the Northeast, the white oak group includes swamp white oak, chestnut oak, and bur oak. The black oak group includes Northern red oak, black oak, scarlet oak, and bear oak.

Most of the acorns near my house drop from the Northern red oak (*Quercus rubra*), one of the most widespread oak species in the Northeast. Its nut is about one inch long, and roughly the same width, giving it a rounded shape. Its cap is thin and flat like a beret, with tight, overlapping scales. This acorn spends two growing seasons on the tree, and after falling on the ground lies dormant through the winter, germinating the following spring.

My woodlands also contain white oak (*Quercus alba*), whose acorn is longer than it is wide and has a thicker, more rounded cap with bumpy scales that do not overlap. The cap covers about a quarter of the nut. This acorn matures in a single season, dropping in early fall and germinating almost immediately, often within a week.

For wildlife, acorns are an essential staple. They are high in calories and fat and contain protein and minerals such as calcium, potassium, and phosphorus. "They are a great nugget of energy for little rodents all the way up to black bear and deer," said Steven Roberge, a forestry specialist and professor with University of New Hampshire Extension. "An animal has to eat a lot of leaves or bark to get such a big nutritional punch."

While all oaks produce acorns, not all acorns are created equal, and the acorns of each group have different characteristics as a food source. Those in the black oak group have more fat, and therefore provide more energy, than those of white oaks. However, these acorns also contain a higher level of tannins, making them less palatable. Most animals favor the sweeter and more digestible white oak acorns. Gray squirrels are likely to eat white oak acorns when they find them and bury those from the black oak group, whose tannins keep them well preserved. Squirrels hoard most of the undamaged black oak acorns they find, losing about 70 percent of them in the process. Those lost acorns often germinate, helping to propagate the next generation of oak trees.

White-tailed deer are among the top acorn consumers, with acorns comprising up to 75 percent of their late fall and early winter diet. One deer may eat 300 acorns per day. In a big mast year (every two to five years), deer weigh more and are more likely to produce twin fawns. Birds such as woodpeckers, blue jays, and many species of ducks also consume acorns. Ducks swallow them whole, while smaller birds peck them apart – getting the value of the acorn as well as whatever lives inside it. And acorns are a favorite food of wild turkeys.

“Turkeys use their long toes and bills to scratch through leaf litter on the forest floor and peck acorns from the ground,” said Allison Keating, turkey project leader with New Hampshire Fish and Game. “They can temporarily store food in their crop (a muscular pouch near the throat) before it goes into the gizzard (part of the stomach), where it is ground up for digestion. Acorns not only help turkeys survive; they help them to be in better physical condition when breeding season begins – which leads to more successful breeding productivity.”

There’s an old saying that “mighty oaks from tiny acorns grow.” However, only about one in 10,000 acorns has the optimal conditions to become a mature tree. A Northern red oak can produce 5,000 to 10,000 acorns in a season, up to 10 million over its lifetime. But weather, insects, and hungry animals consume the majority of these before they can germinate. Considering the odds, I’m thankful for my mature trees – even if I’m not nuts about being hit on the head by falling acorns.

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