

WILDLIFE BASICS FOR THE ARBORIST

All wildlife species require food, water, and cover. Trees and woody plants provide two of these directly. Spraying potentially affects all three.

Many wildlife species, particularly birds, shift their food habits seasonally. Many winter seed-eaters switch to insects in summer.

Some wildlife species are resident (they are present in the same general area all year). **Many others are migratory.** The main migratory periods in our area are: spring (April 15 through June 1); fall (August 15 through October 1). Migratory species are present only when passing through, or during part of the year. Some species are here only in the summer and leave for warmer climates during the winter. Others breed north of us and are present only during winter. A few species exhibit altitudinal migrations. That is, they spend part of the year at high elevations (summer, usually) and part of the year at low elevations (winter, usually).

The prime nesting time for birds species that breed in our area is May 15 through July 15. Of course, many species nest at other times. For example, Great Horned Owls begin nesting in January, with the young being ready to fledge in late May or early June. Many songbirds raise two or more broods. By knowing the specific habits of species inhabiting the properties of clients, an arborist may be able to schedule needed tree-care activities so that disruption or damage to the wildlife is minimized or avoided.

Some species change their location of feeding seasonally. An example would be birds that glean insects from leaf surfaces during summer and forage within bark crevices during winter. In winter elk chew lots of bark and in the summer browse tender shoots. Fox squirrels utilize buds through much of the year, but opportunistically dine on flowers in the spring, fruits/cones in the fall, and branch bark in the winter.

Bats are tremendously valuable insect eaters. They are mostly nocturnal, but on occasion their dawn and dusk feeding overlaps with calm periods selected for tree spraying. They are generally long-lived and have low reproductive potentials. These two facts mean they live long enough to have a high probability of encountering spray episodes and/or accumulate pesticides within their systems, and that they can not easily recover from pesticide-caused losses by producing lots of offspring. Fortunately, materials to which they are most susceptible like chlorinated hydrocarbons are no longer being used. Arborists should do what they can to conserve bats found roosting in cavities or under loose bark.

Reptiles/amphibians/fish are not usually a major consideration in urban spraying. Just the same, direct application to water should always be avoided. These animal groups are cold-blooded and highly susceptible to pyrethroids. Most are insectivores. **Most live on or in the ground, or in water.** As such, drenches or heavy volume applications that tend to concentrate in the soil due to gravity put lots of pesticide in their

living zone. **It is probable these animals are more affected by pesticides, both directly and indirectly, than we know.**

Two sites warranting special protection (such as covering with tarps) are bird baths and fish ponds. Birds can be exposed to pesticides to a higher degree when bathing or drinking than when foraging in tree crowns. Certain varieties of pond fish are very susceptible to poisoning and are expensive to replace.

Some wildlife species are omnivores, others are specialists. For example, crows and fox squirrels eat almost anything. Swallows rely almost exclusively on flying insects.

Among the birds, there are two types of cavity-nesters. So-called “primary cavity-nesters” are the species that excavate and use their own cavities. “Secondary cavity-nesters” use holes made by the primary group. In our area we have 35-60 species of birds that used natural or man-made cavities for nesting.

There is an inherent conflict between the needs of cavity-nesting species and man’s need to minimize tree hazard. The best wildlife trees are often those most likely to result in damage to life or property. Our challenge is to address both issues simultaneously. In some cases, nest boxes can be used to replace cavities removed by pruning.

Pesticides may not affect closely-related target and non-target species in the same way. An example is the effects of carbaryl applied to an open field on two species of mice. In one study, house mice populations doubled following application, while the meadow vole population declined by 50%. The reason is that the meadow voles directly consume sprayed plant material while feeding. This resulted in delayed and depressed reproduction. In response to the reduced meadow vole population, the house mouse prospered. The house mouse “peels” its food (in this case, the seeds inside spray-covered seed coats) before eating it.

Pollinators, such as bees, are important components of urban ecosystems and can be very vulnerable to certain pesticides, particularly carbamates such as carbaryl.

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