

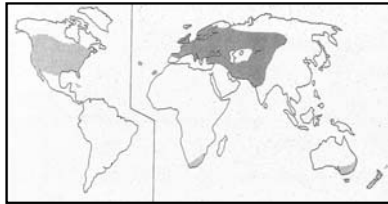


The European Starling



History of Invasion

The European Starling (*Sturnus vulgaris*) is one of the world's most numerous and successful birds in the world. The European Starling is a species of temperate regions and has a wide breeding range extending from western Europe to central Asia, and from Iceland to northern India. In addition, the starling has been introduced to New Zealand, Fiji, southern Australia, South Africa, Jamaica, and North America. In North America it has been remarkably successful. About 100 individuals were released in Central Park, New York, in 1890. From there they spread rapidly and their range now extends from the east to the west coasts and from the Arctic in Alaska to the tropics in Mexico. Starlings in North America now comprise about a third of the world's total population of starlings. In North America, Breeding Bird Survey data from 1968 to 1975 showed an average increase of 16 percent per year in starling numbers in western states. Starlings are now among the most abundant species of birds in North America. Few birds can match this success.



Identification

The starling is a sturdily-built bird with pointed wings and a short, square tail. It forages on the ground and prefers to walk, rather than hop. The plumage is glossy black with green, purple, blue, and bronze iridescence. After molting in the fall, the feathers are tipped in buff or white, giving a spotty appearance. These spots gradually wear away during winter and spring, probably as birds enter and leave nest holes. As the feather tips are lost the plumage becomes increasingly glossy and strikingly iridescent. The sexes are generally similar although the female is slightly duller. In the breeding season the base of the male's bill is a steely blue color while the bill of the female has a fleshy-pink base. At close range the sexes can also be distinguished by the color of the eye. The male's eye is brown; the female's has a pale ring in the iris. They are noisy birds, with a non-melodious song consisting of whistles, clicks, rattles, squeaks, and screeches. They can also incorporate sounds that they learn from their surroundings, and can mimic the songs of other birds.

Biology and description of problems

Starlings are a bird of open grasslands. They forage in flocks on the ground and exploit the wide variety of insects that live in the soil. As the abundance of soil arthropods generally follows the pattern of soil moisture, summer is generally the time of year when food is most limiting for starlings. Wet winters allow the soils to remain moist longer into the summer months. Starlings prefer level, open habitat with low cover of shrubs and trees and areas with moist soil. After the young have left the nest the diet becomes more diverse and fruit may form an important component of the diet. Seeds and grains are also used as they become available. Starlings also eat human-provided foods found in cities and towns, gardens, dumps, and other sources of refuse.

Starlings breed semi-colonally and nest in holes, often in trees, although a wide variety of types of cavities can be used. Their habitat of nesting in cavities which are more protected from predators than open nests results in high nesting success. Starlings are formidable competitors in contests with other species for nest sites. They have been known to usurp nest sites from cavity-nesting birds much larger than they are. Nest cavities are commonly assumed to be limiting for cavity-nesting species. Starlings use nest cavities similar in size and shape to those used by native species, raising questions about nest site availability for these species with increases in starling numbers.

Starlings are adapted to human disturbance and are often abundant in cities and towns, but they are also capable of adapting to local conditions, a characteristic that has allowed them to successfully invade diverse habitats. Starlings are regarded as pests to agriculture and are capable of inflicting severe damage to crops.



Current Forest Service research

Forest Service researchers in California are studying starlings at the San Joaquin Experimental Range (SJER). Starlings were first documented at SJER in the late 1960s. By 1970, SJER was home to several nesting pairs and numbers have increased dramatically in the last 25 years. Presently, they are widespread and abundant breeders throughout SJER and the foothill oak woodlands. Behavioral experiments have shown that native bird species recognize starlings at their nest sites as a threat. The successful invasion of starlings into foothill oak-pine woodlands is likely to negatively impact cavity nesters.

Research done at SJER has shown that starlings avoid ungrazed areas and areas with deep litter. Tall grass in ungrazed areas presumably limits maneuverability and therefore foraging efficiency, but results from previous work also suggest that plant litter depth may also explain the avoidance of ungrazed areas. Research is still underway to determine whether grass height or litter depth is more important in deterring starlings from foraging and the results of this research will have implications for grazing

management on rangelands and mowing practices. Currently, recommendations to reduce the impact of starlings on cavity-nesting birds for rangelands include leaving high or moderate levels of residual dry matter, especially in the moist swale areas where starlings prefer to forage. Where starlings are present in suburban and exurban areas, avoid mowing of extensive lawns, at least in spring when soils are still moist, and leave lawns unraked if possible.

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