

NEW YORK'S WILDLIFE RESOURCES

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Eastern Wild Turkey (*Meleagris gallopavo*)

Description

Superficially, the eastern wild turkey resembles the domestic turkey that plays a major role in Thanksgiving celebrations, but actually they differ in coloration and body shape. The coverts (rump feathers) and retrices (long tail feathers) are white-tipped in the domestic bird, whereas they are cinnamon-brown and chocolate-tipped, respectively, in the wild turkey. The overall body plumage of the wild turkey is a dark brown (appearing almost black in shaded conditions) and has a metallic iridescence. From a distance a wild turkey on the ground looks streamlined, with a sleek body; long pointed tail, long slender legs, long neck, and a narrow, relatively small, wedgelike head. The domestic turkey is a heavier, squat bird; the result of selective breeding for optimum meat production through many generations of turkeys.

As is common in most birds, the males and females differ somewhat in appearance. This difference, usually expressed by secondary sex characteristics (coloration, size, feather distribution, etc.), is called sexual dimorphism. One of the more obvious features of the male turkey (also called "tom" or "gobbler") is its beard, which consists of a tuft of continuously growing, bristlelike feathers located in the center of the breast. This characteristic is not a totally reliable criterion for determining sex, however, because approximately 5% of the females (hens) in eastern wild turkey populations also have beards. The hen's bluish colored (at least in the spring breeding season) head is sparsely covered with a few fine, short feathers whereas an adult tom's red colored (in spring especially) featherless head is adorned

with caruncles (fatty, wartlike growths on the neck), wattling (fleshy lobes hanging from the throat or chin) and the leader, snood or frontal caruncle (oblong, fleshy appendix attached above the bill). The breast feathers of hens are buff-tipped whereas the tom's breast feathers are black-tipped. Adult toms have a spur (toenail-like projection) located above the foot which is absent in the hen. Toms are generally conspicuously larger than hens. Female poults (young turkeys) may average 3.6 to 4.5 kg (8 to 10 lbs) by late fall compared to young gobblers which typically weigh 5.4 to 6.3 kg (12 to 14 lbs). Adult hens and toms weigh about 5.4 to 6.3 kg and 7.2 to 9.0 kg (16 to 20 lbs), respectively, in late fall.

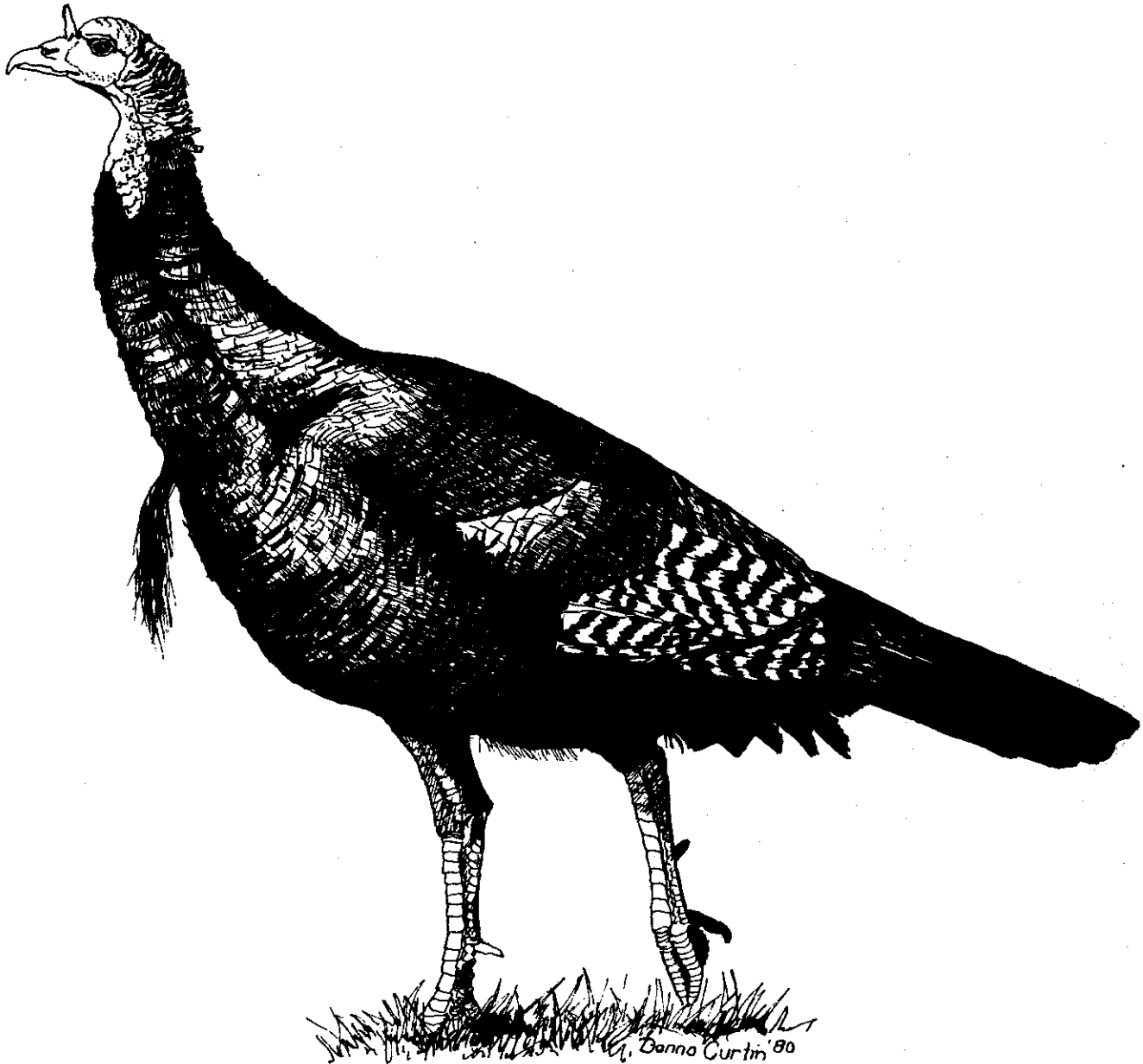
An indirect method of determining the sex of adult turkeys of particular interest to hunters scouting an area for turkey activity is by examining turkey droppings. Droppings of the adult male tend to be rather straight and elongated with a slight curve on the end. They may be up to 15 mm (0.6 in) in diameter as compared to 10 mm (0.4 in) in diameter for yearling gobblers and 5 to 8 mm (0.2-0.3 in) for hens. Droppings from a hen tend to be looped, spiral or bulbous in shape. Turkeys also have a flat, pancake-shaped dropping found anytime during the year from which sex cannot be determined.

Young of the year at 16 to 22 weeks of age (typical age of poults during fall hunting seasons) can be most easily distinguished from adults by: (1) the uneven contour of the tail spread caused by the longer length of the center 4 to 6 retrices and (2) the pointed, unbarred tips of the wings' outer primaries (from 1 to 3 feathers).

Distribution and Abundance

The eastern wild turkey ranged throughout New York State south of the Adirondack Mountains in early colonial times. It was eliminated from the state by the mid-1800's because of a combination of factors: proliferation of small farms all across the state, extensive logging of the hardwood forests, introduction of domestic poultry diseases, and unrestricted hunting.

Abandonment of marginal farmland in the rugged and relatively infertile uplands of southern New York through the first half of this century has gradually led to a restoration of wild turkey habitat. Turkeys first reappeared in Cattaraugus County in the late 1940's. These birds were



emigrants from the expanding Pennsylvania population. From 1952 to 1960, over 3100 game-farm reared birds were released in New York in an effort to accelerate the establishment of the wild turkey throughout potential prime habitat. The semi-domesticated turkeys could not cope with wild conditions and for all practical purposes those releases were failures. Since 1959 about 950 wild turkeys have been trapped from well-established populations in New York and released into potential range in New York and Vermont. The wild stock has done remarkably well, with the population expanding into habitats originally considered to be of moderate quality. Currently, wild

turkey populations are firmly-established in portions of every county south of the New York State Thruway from Buffalo to Albany and east of the Hudson River from Washington to Putnam County. Results of recent releases in the peripheral Adirondack and Great Lakes Plain areas have also been promising. Wildlife biologists believe that New York has about 62,500 sq. km (25,000 sq. mi) of potential turkey range, over half of the state's total land area.

Life History

The production of sex hormones in adult toms is stimulated by the increasing daylight hours of spring. The beginning of breeding season in early April is announced by the first gobbles of the males. Toms will gobble while on the roost at dusk or dawn, but gobbling is most often associated with the courtship displays occurring during the first few hours of each relatively mild, clear day of the breeding season. The gobble commonly consists of three distinct successive vocalizations, a schhhhh... sound produced by the rapid expulsion of air from the tom's lungs, followed by a deep bass vrrrrrump noise followed by the characteristic rapid gobble-gobble-gobble-gobble. The "gobble" portion of the call can be heard up to 1.5 km (0.9 mi) in favorable conditions. During the display strut the gobbler's tail and wing feathers are fanned out, all body plumage is fluffed out, and the wings are positioned so that the tips of the outer primaries drag the ground. The caruncles and wattling are gorged with blood and become a crimson red, and the neck is pressed back with the head pressed forward onto the throat.

Interested hens respond with low, quavering clucks or high-pitched yelps and frequently will seek out the amorous males. As each morning progresses, a gobbler may acquire a harem of several hens. Yearling males and even one or two rival adult gobblers may appear on the scene. Yearling males generally make no attempt to mate in the presence of a displaying adult male; therefore, their presence is usually tolerated by the dominant tom. Brief disputes commonly break out between rival toms but two or more gobblers may breed the same harem. Breeding displays continue into early June, even after the majority of the hens have deserted the gobblers to incubate their eggs.

After being bred, the hen forms a rough 20 by 25-cm (8 by 10-in) nest by merely twisting her breast into the forest's ground litter. Nests are generally located under the cover of low hanging evergreen branches, or in tangles of honeysuckle or grapevines which are in or near a forest opening. One egg is laid nearly every day until the clutch is completed at about 13 eggs. Eggs are about the size of extra-large chicken eggs and are white to pale cream-buff with small, reddish-brown blotches. During the egg-laying period the hens are still attracted to displaying males and occasionally mate even though only one successful mating is necessary to fertilize a clutch of eggs. Hens do not tend the nest until a complete clutch is laid.

Full-time incubation takes place in New York during the first week of May. Early in the nesting period hens are easily frightened from nests, but become much more steadfast as hatching time approaches. If the eggs are destroyed or a hen abandons a nest, she will usually reneest or continue to lay eggs until the clutch is complete.



Incubation takes 28 days and usually 24 to 36 hours elapse between the first and last hatching. Shortly after the chicks have dried and rested from hatching, the hen cautiously leads the brood to a nearby field or forest opening for their first nourishing, high-protein meal of insects. The chicks are very susceptible to exposure from any combination of rain, heavy dew, or cold temperatures. They are brooded by the hen during such conditions until they reach 4 to 5 weeks old, then they are capable of flying to roosting sites with the female. Hens breed in their first year. While toms are capable of breeding their first year, they are usually prevented from doing so because of older dominant males. Under ideal conditions turkeys may live up to 12 years of age, but in the wild few live past their second year.

Wild turkeys are gregarious (readily associate with each other), but the composition of flocks varies through the seasons. A strict social hierarchy or "pecking order" based on sex, age, and size is maintained within all flocks. Several hens and their broods may flock together from mid-summer into the fall. Adult gobblers are in bachelor flocks from the end of the breeding season through the summer. By late fall or early winter a few adult toms may join the hens and poults, but flocks of similar-aged males (young of the year, yearlings, 2-year-olds, etc.) are also common. Several flocks may briefly associate with each other in areas of concentrated food supplies late in the winter when food may be limited.

Wild turkeys are highly mobile. A resident flock of turkeys may utilize an area of about 50 sq. km (20 sq. mi) over a period of a year. The shape and size of home ranges varies depending upon seasonal food availability, terrain, and human land-use patterns. The mobility of individual turkeys varies considerably with their age and sex. Adult toms are the most sedentary, ranging only about 3 km (1.8 mi) annually. Adult hens range about 4 km (2.4 mi) per year, traveling with their poults from nesting sites to summer brooding areas and later to mature forests where mast is available in the fall. As a result of territoriality of adult hens at nesting sites and the aggressive behavior of adult toms during breeding season, the subordinate juvenile males and females disperse from their original home ranges into less densely populated ranges during the spring of their first year. In New York dispersal distances average 16 and 9.5 km (9.6 and 5.7 mi) for juvenile hens and toms, respectively.

Wild turkeys might appropriately be called "vacuums of the forest" because of their varied food habits. Almost any item that has some nutritional value, and can fit down a turkey's throat, will be eaten. Adult birds readily eat new plant life of all kinds through the early spring; shoots of grasses, sedges and forbes; buds, flowers and leaves of shrubs and trees; and roots, tubers and bulbs of perennials. Mast and dried fruits scattered in the forest's litter are also important components of their diet in the spring. Insects, centipedes, millipedes, spiders, snails, and slugs are vitally important to egg-laying hens and their chicks as high protein foods from spring into summer. Grasshoppers, beetles, and crickets become choice food items in late summer. The fruit, berries, and seeds of nearly every species of plant are included in the summer diet.

Fall is a time of plenty for turkeys. Their high mobility allows them to locate and utilize any mast or fruit crop in their range: acorns, beech-nuts, hazelnuts, wild cherries, wild grapes, flowering dogwoods, and wild raisins.

Winters of average snow accumulations pose no problem to wild turkeys. They can easily scratch through 10-15 cm (4-6 in) of unpacked snow to reach covered nuts and seeds. Turkeys often feed where deer have pawed through deep snow in their search for food. Windswept grain and corn fields are important to turkeys in agricultural areas. They will also scavenge undigested corn and grain from livestock manure spread on fields. Open spring water seeps supply turkeys with nourishing animal life in the form of insects, snails, and crustaceans. When the snow cover is impenetrable, turkeys will resort to budding on species such as aspen, birch, and mountain ash although these are of only marginal nutritional value to turkeys.

Turkey nests are particularly vulnerable to predation and freezing prior to the incubation period. A list of potential nest robbers includes: raccoon, opossum, mink, weasel, squirrel, red and gray fox, coyote, skunk, crow, domestic dog, and black snake. Nesting success may average about 55% in New York. A combination of factors including inclement weather, accidents, disease and predation by foxes, weasels, domestic dogs, and hawks may on the average hold poult survival to 25% by their sixth week. No predator is capable of regularly taking adult turkeys because of the birds' ability to defend themselves, wariness, speed on the ground (30 kph [18 mph]), and

ability to fly. Adult turkeys are occasionally preyed upon by bobcats, red and gray foxes, domestic dogs, coyotes, and great horned owls. Adult predation is not considered to be a significant mortality factor of established populations in good habitat.

Wild turkeys are susceptible to a multitude of diseases and parasites, many of which are transmitted to wild birds by domestic fowl. Blackhead (enterohepatitis) is one such disease routinely carried by chickens, which themselves seem to be immune to the disease. It is, however, extremely contagious and fatal to domestic and wild turkeys. Turkeys that are resistant to the disease can act as carriers and spread the disease throughout the population. Other, usually less devastating diseases of the wild turkey are: fowl typhoid, fowl cholera, avian tuberculosis, botulism, fowl pox, aspergillosis, coccidiosis, and trichomoniasis. Flukes (trematodes), tapeworms (cestodes), roundworms (nematodes), gapeworm and crop worm are some of their internal parasites. Turkeys are commonly afflicted with the following external parasites: lice, mites, ticks and hippoboscid flies. The incidence and severity of these diseases is greatly influenced by population density and the ability of a range to support the resident turkey population. Semi-domestic turkeys raised in contaminated pens and released into the wild are often carriers of diseases.

The annual mortality rate from all causes (including hunting) is estimated to be 60 to 65% and 45 to 60% for adult males and females, respectively, in New York. Despite the many factors acting to subdue turkey populations, their populations can grow rapidly in good quality range. A release of 31 New York birds over a 2-year period in Vermont grew to a population of 300 in just 3 years.

Although wild turkeys are extremely shy and elusive, evidence of their presence in a woodland can be detected easily. On clear, mild, spring mornings adult toms can be heard as they gobble in hopes of attracting hens. In the spring and fall, characteristic turkey scratchings can be found beneath nut or fruit trees. As a turkey searches for food items in leaf litter on the forest floor, it will typically stand on one foot, reach ahead with the other and kick leaves back and to the side at about a 45 degree angle. The same process is conducted on the other side, which leaves an inverted "v" pointing in the direction the turkey was facing. A close inspection of the scratching will often disclose a few footprints in the moist, bare soil. If

the distance from the tip of the middle toe to the back of the heel pod is more than 11 cm (4.3 in), then the tracks probably are those of gobblers. Tracks are, of course, very conspicuous in snow.

A flock will generally return to the same grove of trees to roost each night as they feed in a particular part of their range. At dawn or dusk the powerful beat of their wings can be heard as they fly from or to the roosting area. Toms will occasionally gobble while at the roost. Other signs at the roost are droppings and moulted feathers scattered throughout the area.

Because wild turkeys occupy such a large home range and travel as they feed, they are frequently spotted by motorists when crossing roadways or feeding in fields. Turkeys usually feed for a few hours after dawn and again just before dusk, except during extreme cold spells or winter blizzards. At these times they may stay on the roost for several consecutive days, or feed only during the relatively warm afternoon hours.

Habitat

The adaptability of the wild turkey to a wide range of habitat conditions in New York was somewhat unexpected. Until recently wildlife biologists assumed that viable turkey populations could only exist in extensive stands of fully mature hardwood. It now appears that turkeys can expand into range that may be only 30% forest. The hardwood stands need only be mature enough to supply mast and have a closed canopy that impedes the development of ground cover. Turkeys will avoid dense cover where brush may hamper their ability to run or fly or to see approaching predators.

A minimum of 10% of the total range may need to consist of forest openings which can provide adequate insect food for young poults. Plants such as grasses and clovers also produce nutritious shoots, flowers and seeds. Active agricultural land can be an important component of turkey range. Unharvested corn and fruits are readily eaten during winter shortages of natural food.

Plant species diversity is a measure of the ability of a range to support a stable turkey population. While turkeys will eat a wide assortment of food items, adequate supplies of at least one item must be available at all times. They are particularly dependent upon good mast supplies as a winter food staple. A variety of mature nut tree species lessens the possibility of a complete mast crop failure which could be disastrous to a turkey population.

Habitat management for any wildlife species consists of ensuring the creation or continuance of all essential life support requirements of the species. In New York State little actual habitat manipulation was necessary to create favorable turkey range. Natural succession, agricultural practices and the reduction of rural populations contributed to produce the state's 62,500 sq. km (25,000 sq. mi) of potential turkey range.

Certain land-use practices can improve or maintain current range. Logging on a selection cutting basis where only fully mature trees are removed is not harmful to turkey range if an adequate number of younger mast producing trees remain. Clear cutting small blocks of timber within large stands can be beneficial by providing additional forest openings where poults can find protein-rich insects to feed upon. Thinning dense, pole-size stands opens up the understory which increases visibility and promotes faster maturity of remaining mast trees.

Trails, abandoned roads, utility rights-of-way, and logging headers may provide an adequate amount of open habitat for turkeys in many ranges. Where practical, such clearings should be mowed every 3 to 5 years to set back succession and promote the growth of perennials that provide seeds and berries. When necessary, new clearings should be at least 0.2 ha (0.5 ac) and round or square in shape to allow maximum sun penetration. Sites with disturbed ground cover as a result of bulldozing or logging activities generally must be limed and fertilized before planting grasses or clovers. Hens prefer to nest within a few hundred meters of clearings, so widely dispersed clearings reduce competition for nesting sites.

Ecological Role

The wild turkey is not a major prey of any large predator, but because of its wide distribution through southern New York, it may be of importance to the general predator population as an alternate prey source. Nesting success and poult survival is fairly low and thus some predators and scavengers benefit by the presence of turkeys in their range.

A subtle, yet important role turkeys play in nature is the distribution of seeds. A large proportion of the turkey's diet consists of seeds, berries and fruit. Seeds and pits that escape digestion are deposited by the highly mobile turkeys, usually some distance from where they were consumed.

Wild turkeys have a voracious appetite for insects of all kinds and for grasshoppers in particular. Flocks of turkeys in small field situations may be quite valuable in keeping these potential pests in check.

Management

The management of the wild turkey in New York State (and in the East in general) has been an overwhelming success. Management thus far has focused around two activities: the stocking of wild birds and controlled harvesting.

As of 1979, only about 12,500 sq. km (5,000 sq. mi) of potential New York range remained to be stocked with wild turkeys. Attempts to use game-farm birds for stocking have proven this practice to be very expensive and undesirable overall. The survival rate of such birds is very low because of their reduced vigor and wariness. Game-farm birds frequently are carriers of diseases and parasites, and their potential crossbreeding with wild birds could result in genetically inferior birds.

Sport hunting, first allowed in 1959, is an important aspect of management in the state. Dollars from the sale of licenses, special permits, and federal taxes on firearms and ammunition are used for management purposes. Limited hunting keeps turkey populations in balance with the ability of their range to support them. Overpopulation can contribute to conditions that would foster disease outbreaks. Spring hunting (only bearded birds may be taken) is allowed in ranges with limited potential or newly established populations. Since males are polygamous and seasons are held after most hens have been bred, spring harvests have only a minor impact on populations. Spring and fall (turkeys of either sex are legal) hunting seasons are held in highly productive ranges with firmly established populations. Hunters are limited to one turkey per season.

Economic and Social Values

With the reintroduction of turkeys throughout much of the state, there has been some concern over the possibility of wild fowl transmitting disease and parasites to domestic fowl. Such an occurrence appears remote, however, because the vast majority of commercial poultry operations keep their birds permanently housed in enclosed structures. A common cause of disease transmittal in wild turkey range from domestic to wild fowl is the practice of spreading poultry manure in fields as fertilizer.

Benjamin Franklin was a strong advocate of a movement to have the wild turkey designated as the National emblem. The wild turkey exemplifies the essence of wilderness. It is a hardy, wary, and intelligent bird, yet it can not tolerate frequent disturbance by man. Phrases such as "dumb turkey" or "turkeys are too dumb to come in out of the rain" were not initiated by anyone familiar with the wild turkey. As an indication of its popularity with hunters and other wildlife enthusiasts, the National Wild Turkey Federation, dedicated to "the wise conservation and management of the American wild turkey", has a membership of over one million members.

A strutting tom pompously displaying for the attention of hens is one of the most thrilling and beautiful performances found in nature. The setting--a quiet mature hardwood stand; the season--mid-spring, as the forest community is stirring back to life after a long winter; the time--early morning on a mild, calm day; are some of the factors that contribute to a truly memorable experience for all who witness it.

Hunting spring gobblers is an extremely demanding and specialized sport. Despite very low success rates (1 out of 15 hunters harvest a turkey) an estimated 30,000 devotees participate in New York's spring season. Adult gobblers are much too wary to stalk with any reasonable degree of success. Hunters must call them in with the use of non-electric callers that imitate the call of a receptive hen or the challenge of a rival tom. Blinds and camouflage clothing are necessary because of the birds' extraordinarily keen sight and hearing.

Fall hunting is a bit easier than spring hunting, but still the challenge is high and the success rate relatively low. The usual procedure used in the fall consists of locating and breaking up a flock by either the hunter or his/her dog spooking them. The hunter then takes cover and with a call attempts to lure in scattered members. Poults are generally eager to reassemble, but they are far from foolish.

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