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Fifteen Ways Purple Martins Are Unique Within the Entire Bird World

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An adult male Purple Martin peering out of his nest in a horizontally-hung natural gourd. This bird and its mate are just one of a record-breaking 729 pairs of martins nesting at Victor and Esther Stoll's colony site in Finger, Tennessee.

1. Only bird species totally dependent on humans. The Purple Martin has the unique distinction of being the only bird species in eastern North America totally dependent on humans for supplying it with nesting sites. Today, in the east, it nests exclusively within housing supplied by humans. It is only under the rarest of situations that it is ever found nesting in its ancestral ways (in old woodpecker cavities) east of the Rockies. Because of this total dependency on humans, the Purple Martin would rapidly disappear from eastern North America if we humans were to suddenly stop providing housing for it. The Purple Martin needs our continued help.

2. Managed by humans longer than any other bird species. The Purple Martin has been managed by humans longer than any other North American bird species. Thousands of years ago, Native American Indians discovered the pleasure and utility of attracting the Pur-

ple Martin to their villages by hanging up hollowed-out gourds for it. Gradually, over the centuries, this cultural tradition spread to many other North American tribes. Then in the 1600s, when European colonists began arriving in the New World in great numbers, they too were quick to adopt the tradition of martin attraction. Remarkably, but not surprisingly, the practice of hosting martins has persisted to the present day — humans find martins incredibly fascinating and appealing! Purple Martins make great neighbors!

3. Tamest wild bird. Because of this long association with humans, the Purple Martin is now one of the tamest of all wild birds. In yards where they are conditioned to daily, close approach, a martin landlord can typically get within about six feet of a perched martin before it will flutter to alight slightly farther away. The Purple Martin is one of the few birds in the entire world that was never persecuted or hunted by man, instead it was nurtured and loved by him. Because of this lack of threat, the martin didn't have to evolve a "fear of man" to survive, as did most other birds that were hunted buy man.

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An adult male Purple Martin in constant vigilance mode, scanning the sky for the possible approach of an aerial predator.

4. One of only three birds to undergo a complete tradition shift. The Purple Martin is one of only three North American bird species that has undergone a complete "tradition shift" in its nesting behavior. Before the arrival of man in the new world, the Purple Martin nested only in old woodpecker cavities and within the natural cavities of trees and cliffs. Likewise, the Chimney Swift nested only in huge, hollow trees, and the Barn Swallow nested only in the mouths of caves or in other protected rocky niches. Today, all three of these species nest exclusively on, or within, man-made structures. This is the result of a population-wide "tradition shift" in nest-site choice. Today, the martin nests only in martin houses and gourds (in eastern North America), the Barn Swallow only in barns or garages, or under bridges, wharfs, or porches, and the Chimney Swift only in chimneys. This is because all three species adapted to the radical changes wrought by man on the North American continent and gradually abandoned their ancestral ways, opting instead for nesting sites in the relatively-safer proximity of man.

5. Largest North American swallow. The Purple Martin is the largest and heaviest of the 9 swallow species that breed in North America north of Mexico. The Purple Martin weighs about 50 grams (1.75 ounces), whereas the Barn Swallow, Tree Swallow, Violet-green Swallow, Bahama Swallow, Cliff Swallow, Cave Swallow, Bank Swallow, and the Northern Rough-winged Swallow each weigh around 20 grams (0.7 ounces). Consequently, the martin tends to specialize on capturing the largest flying insects, ignoring the smaller ones except when feeding tiny young.

6. Only colonial nesting, secondary-cavity nester in North America. The Purple Martin is the only secondary-cavity nesting Passerine in North America that is also a colonial nester. A "secondary-cavity nester" is an animal that nests in a pre-existing cavity because it doesn't have the equipment to excavate its own like a woodpecker does. A "colonial nester" is a bird that nests in dense groups. Bank Swallows are colonial cavity nesters, but they aren't secondary cavities; they excavate them. Barn, Cliff, and Cave Swallows are also colonial nesters, but they aren't secondary-cavity nesters — they construct their nests of mud.

7. Only songbird species with an international organization named for it. The Purple Martin is the only Passerine that has a international organization created just to promote and conserve it; the *Purple Martin Conservation Association*. The *North American Bluebird Society*, a similar entity, can't make the same claim because it was created to help all three North American bluebird species.

8. Only songbird that has a color magazine devoted entirely to it. Other bird species have newsletters, tabloid newspapers, and one-color journals dedicated to them, but only the Purple Martin has a glossy, 4-color magazine devoted entirely to it (i.e., the *Purple Martin Update,* published quarterly by the *Purple Martin Conservation Association*).

9. Earliest returning, tropical-wintering migrant. The Purple Martin is the earliest tropical-wintering migrant to return to the North American continent The Purple Martin begins arriving in southern Florida from its Brazilian wintering grounds during the first half of January. The other tropical-wintering migrants (e.g., the warblers, tanagers, flycatchers, vireos, grosbeaks, orioles, and thrushes) all begin returning much later. It is theorized that this risky, early return of martins (they are often killed by late snow storms in the north) is the result of intense competition for the limited supply of secondary nesting cavities. The only migrant swallow to beat the martin back to its northern haunts is the Tree Swallow, but it is not a tropical-wintering migrant. It winters in the southern United States.

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A colony of Purple Martins nesting in a wooden T-14 Purple Martin house, with four natural gourds hung under it.

10. Only bird species that supports a multi-million dollar housing industry. It is estimated that the seven major martin house manufactures (i.e., Heath, Nature House, S&K Manufacturing, Coates, Mac Industries, Heritage Farms, and Lonestar) sell about 150,000 units combined, annually. When purchased with a pole, most of these houses retail for between $250.00 and $500.00 each. If you assume that the average martin house sells for around $300.00, then over 45 million dollars is generated by the sale of these commercial houses, annually. If you then factor in sales from the four major manufacturers of plastic gourds (plastic gourd sales actually surpass house sales in numbers of units sold, annually), racks to hold all these gourds, the natural gourd sellers, and the "cottage industry" wooden martin house builders, you end up with a housing industry that may generate as much as 50 million dollars, annually! That's a lot of bread to cater to just one bird!

11. Only bird species widely promoted by misinformation. A few overzealous martin house manufacturers have become extremely wealthy by fostering the myth that Purple Martins can eat 2000 mosquitoes per day. Their packaging and sales literature are plastered with this slogan. Such assertions, however, are blatantly untrue. Unfortunately, their propaganda campaigns have been so successful that most martin landlords embrace this falsehood with religious fervor. And because this fabrication has received such wide circulation for so many years, nearly every American knows the Purple Martin as the "mosquito-eating bird." Such inaccurate claims are nothing more than sales hype designed to sell more martin houses. And it works — many people put up housing because they've been misled into thinking martins will control the mosquitoes in their neighborhood.

In reality, the martin eats few, if any mosquitoes. The numerous studies that have been conducted on martin diet reveal that it prefers larger, more energetically-rewarding, insects such as dragonflies, damselflies, butterflies, moths, grasshoppers, katydids, mayflies, cicadas, beetles, flies, wasps, midges, and flying ants. In most of these diet studies, not even a single mosquito was found in the martins' stomachs. But when they were found, they comprised less than 3% of the martin's diet, by volume, and these studies involved the much larger, day-flying salt marsh mosquito, found only in a narrow band of habitat along coastal estuaries.

Such an absence of mosquitoes in the diet of martins is not surprising. The activity periods of martins and freshwater mosquitoes overlap for only about 10 minutes at

dusk (freshwater mosquitoes do not fly high, in the open sun during the day, where martins feed. Instead, they stay low, in shady, humid areas and are totally inactive unless a mammal host happens by.) Out of the approximately 930 minutes available to martins each day for foraging, this 10-minute overlap period amounts to just 1% of their total foraging time. Even mosquito specialists (animals that eat nothing but mosquitoes) don't control them despite devoting 100% of their foraging time to their pursuit. The bottom line: don't put up a martin house with the hope of making your yard mosquito free, it won't happen!

12. One of only a handful of bird species with FOUR distinct breeding plumages. Because Purple Martins exhibit both *sexual dichromatism* (i.e., the males and females have different plumage coloration) and *delayed plumage maturation* (i.e., 1-year-olds versus 2-year-olds, and older individuals have distinguishably different plumages) the species has four recognizably-different breeding plumages. These are: subadult male, subadult female, adult male, and adult female plumages. Male and female Purple Martins don't acquire their adult plumage until their third summer of life when they are two years old.

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A subadult male martin perched in the entry hole of his gourd. His mouth is open because he is thermoregulating, using evaporative cooling from the moist lining of his mouth.

13. One of only a few bird species that deliberately feeds its nestlings glass and metal fragments. The Purple Martin is a *lithophagous* (i.e., "stone eating") organism. It frequently feeds its nestlings sand, shell, quartz, broken glass, and metal fragments for its grit and/or calcium content. This is a beneficial adaptation to aid in the mechanical breakdown of the large, hard-bodied, insects they are fed. In concert with the muscular contractions of the bird's gizzard, grit acts as "teeth" for the "chewing up" of food. All of this grit passes harmlessly through the birds' digestive systems.

14. The songbird most severely jeopardized by mans' previous ignorance. Man dealt the Purple Martin (and our other native, secondary-cavity nesters) a devastating double blow when he deliberately released the European Starling and the English House Sparrow into this continent from Europe a century ago. These alien "niche-snitchers" have reproduced and spread across our land like a vast avian plague, entirely at the expense of our native cavity nesters. Because starlings and House Sparrows kill martins, steal their nest cavities, puncture their eggs, and throw their nestlings onto the ground, the martin population has suffered immensely. It is estimated that as of 2012, its population has been reduced to only about 10% of what it was in the mid-1800's, before this human debacle transpired. Because humans created this lethal problem for the martin, we now have the moral obligation to protect it from these two species. If we don't, the Purple Martin could disappear forever.

15. Only species of songbird in the world with a well-established, symbiotic relationship with man. A *symbiotic relationship* is defined as any interaction between two species of organisms that is mutually beneficial to both. Humans have catered to the needs of Purple Martins for thousands of years by supplying them with safe, artificial places to nest (gourds). To reciprocate, martins give their human caretakers hours of endless visual entertainment, supply them with an environment filled with song, control the flying insects that pester him, and deter the hawks, crows, and vultures that interfere with his interests. Obvously, both species profit from this mutually-beneficial arrangement.

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