Identify, Attract & Manage Purple Martins

A free Educational Guide published by the



Getting Started with Purple Martins

How can I help the Purple Martin?

Purple Martins need your help. East of the Rocky Mountains Purple Martins almost exclusively nest and depend on human-supplied housing. Purple Martin populations are declining in some areas of their breeding range. For the sake of one of our most beloved native species, Join the Purple Martin Conservation Association (PMCA) to help ensure the future of Purple Martins (see membership information on the back cover).

Why do people want Purple Martins?

Purple Martins have long been one of America's favorite birds, loved for their beautiful gurgling, chattering song, graceful flight, social antics and insect-eating habits. They nest in groups and return to the same colony site year after year. It truly is a rewarding hobby.

Are there martins in my area?

Purple Martins have a wide breeding range, from Florida up into Canada. View a map of their breeding range on the final page. You can always be on the lookout for the perfect spot for Purple Martins, at a local school, park or nature center.

I'm obsessed! How can I be more active in the martin community?

It's an easy problem to solve! If you just can't get enough of Purple Martins visit our online forum, *www.purplemartin.org/forum*, where you can interact with Purple Martin landlords and 'wannabes' just like you, or our Facebook page and meet other landlords and share your enthusiasm for this wonderful, deserving species.

What if I need help?

The Purple Martin community is wonderful, and there are many places to go for help. The Purple Martin Conservation Association Forum is a fantastic place for landlords to share their stories and suggestions and our Martin Mentor Program is a great tool for finding fellow Purple Martin enthusiasts in your area. You can always contact the PMCA. For almost 30 years, we've been helping Purple Martin landlords with their questions.

For more information and to connect with other martin enthusiasts please visit us at www.purplemartin.org.

Shop at our Martin Market Place®: shop.purplemartin.org

Purple Martin Conservation Association

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Identifying Purple Martins

Purple Martins are native songbirds in the swallow family. They are engaging birds that provide much enjoyment. People attract martins to their backyards for the birds' social chatter, their entertaining flight, and insect-eating habits. Once martins take up residence, they return year after year, bringing you a dynamic way to welcome spring! Martins also provide opportunities for backyard nature projects enjoyable to young and old alike. As you monitor your birds, you will see nest building, egg-laying, and then watch the nestlings grow!

Length:	7.5 in (19 cm)
Weight:	1.97 oz (56 grams)
Wingspan:	15-16 in
Males:	Adult males (termed ASY for 'after-second-year') have an all-dark (black/blue/purple) plumage. Subadult males (SY for 'second year') have at least one, but can have many dark purple feathers on head, throat, or belly. Can easily be confused with an adult female.
Females:	Adults have more purple on their head and back than subadult females and their undertail feathers are much darker.
Habitat:	East of the Rockies, martins nest almost exclusivly in human-supplied housing. They like a clear, open area fairly close to human housing.
Food:	Martins are aerial insectivores, consuming insects during flight. Diet includes dragonflies, moths, butter- flies, flies, beetles, wasps and other flying insects.
Nest:	Constructed of dry plant material and twigs, lined with green leaves.
Eggs:	White, 24.5 x 17.5 mm, average 4-6 per clutch.
Incubation:	16 days, starts when the next to last (penultimate) egg is laid.
Hatching:	All eggs in a nest usually hatch within 48 hours.
Migration:	Migration to Sao Paulo, Brazil takes an average of 4 to 6 weeks and covers 5,000 miles one way!
Subspecies:	There are three subspecies of Progne subis— •Progne subis subis: Eastern—nests almost entirely in human-supplied housing. •Progne subis hesperia: Desert southwest—nests in cavities in Saguaro cacti. •Progne subis arboricola: West coast of CA up into British Columbia—nests in natural cavities in trees and single-unit gourds and hores







How to attract Purple Martins

Attracting Purple Martins can take anywhere from a few weeks or months, to as long as several years. However, there are many ways to increase your chances of attracting martins, and to keep them coming back year after year.

Choose the Right Location

Martins prefer housing that is placed in open areas. Choose the center of the largest open spot available, about 30–120 feet from human housing and 40–60 feet from trees. In the southern half of their breeding range, martins may accept housing that is placed within 25 feet of trees, but open areas are always best. Place the housing where you can enjoy watching the birds. Do not attach any wires to the house or pole that lead to trees, buildings, or the ground as they may allow predators to access the housing.

Use Attraction Tools & Aids

A few additions to your housing can make your site more attractive to Purple Martins. Offer a combination of houses and gourds. Play a Dawnsong recording*, add a Purple Martin decoy* or two. Place 1–2" of nesting material including pine needles or straw in each compartment.

Open Housing at the Right Time

The first martins to arrive in an area are referred to as scouts. Scouts tend to be adult males, looking for suitable nesting areas that will best attract females. Subadult martins (last year's young) will begin arriving 4–8 weeks after the first adults. Purple Martins only use housing during the breeding season. Until the birds begin to arrive back from migration, keep houses and gourds closed. This will deter other native and non-

*You can find these products at our Martin Market Place® at shop.purplemartin.org native cavity-nesting birds from claiming the housing. Refer to the adult migrationtiming map on the last page to estimate the arrival date of martins in your area. Your housing has the opportunity to attract nesting martins well into the summer, as martin migration is a drawn-out affair. Martins can begin nesting up through the end of June.

Do Not Close Housing Too Soon

Do not close the entrance holes or take the housing down until late August. Fledglings may be exploring breeding sites for next year into late summer.

Educate Yourself

Talk with other martin landlords, visit local martin colonies, and explore the Purple Martin Conservation Association website. www.purplemartin.org



How to select Martin Housing

T raditionally, Purple Martins nested in natural cavities such as old woodpecker holes, on rock ledges, or in dead trees. However, thousands of years ago, people began providing man-made housing for the Purple Martins in the form of dried, hollow gourds. Over time, the successful nesting of martins in these man-made homes, paired with the decrease of natural cavities, led to a complete behavior shift within the eastern species.

In place of natural cavities, martins select elaborate bird house condominiums and racks of natural or artificial gourds. Housing differs in size, style and material, however many units have the same basic parts.



* Please visit **shop.purplemartin.org** for Purple Martin products including housing systems, gourd racks, predator guards, attraction tools and more.

1 Multi-compartment House

A single pair will nest inside each individual compartment. Houses are available in a variety of styles, sizes and materials.

2 Gourds

Martins build nests inside man-made and natural gourds. Modifications provide compartment access to "landlords."

3 Entrance Hole

Allows birds to enter the compartments. Entrance holes can be round or starling-resistant shapes and are often accompanied by a porch.

4 Perch Rods

Provides a place for the martins to rest while they preen their feathers, watch for predators and survey the colony site.

5 Owl/Hawk Guard

Vertical rods placed across the front of the house or gourd to prevent owls and hawks from reaching into the cavities.

6 Pole

Elevates the housing compartments and allows for easy raising and lowering. Poles function on telescoping, rope & pulley, or winch (shown) systems.

7 Predator Guard

Keeps climbing predators like raccoons and snakes from climbing the pole.

Compartment Interior: The minimum size for compartments is 6" x 6", but larger compartments (measuring 7" x 12" from front to back) offer greater protection from predators and the elements. Gourds should be at least 8" in diameter, with gourds in the 10-12" range being ideal. Compartments must be large enough to accommodate 4-6 nearly-grown nestlings and both parents. Houses with smaller rooms can be remodeled to offer larger, two-room suites (PMCA how-to info available online.) Spacious compartments allow nestlings to spread out to keep themselves cool in hot temperatures. Wooden houses and natural gourds should have a natural (unpainted) interior. Metal or plastic housing with flat, slick floors could result in young developing splayed legs-a potentially fatal abnormality that can be prevented by providing textured subfloors in each compartment.

Compartment Access: Access to each compartment during the nesting season is essential, for monitoring martins and control of starlings/House Sparrows.

Entrance Hole: Traditional round entrance holes are generally 2-1/8" in diameter, but a range of 1-3/4" to 2-1/4" is acceptable. Round entrances should be placed 1" to 1-1/2" above the floor or porch. Starling-resistant entrance holes* (1-3/16" tall x 2-3/4" to 3" wide) should be placed so the bottom of the entrance is flush with the compartment floor, or not more than 1/4" below it. With gourds, a porch is not required with a starling-resistant entrance, although many landlords use them.

Vertical Accessibility: Martin housing should raise and lower vertically on a telescoping pole or with a winch and pulley system. Housing will need to be lowered, sometimes on a daily basis, to remove competitor nests and to monitor martin nests weekly.

Height and Installation of Pole:

Recommended height is 12–18'. Poles should be securely set in concrete, with 18–25" below ground. Many manufacturers offer mounting sockets or stakes, so you can relocate or remove poles.

Material: Aluminum, thick plastic, wood, and natural gourds are all suitable materials for martin housing, provided that the exterior of the house is white in color. White reflects heat, keeping housing cooler in hot temperatures. Wooden housing should be made from untreated material only. Wood 3/4" thick will provide the best insulation against heat and cold. Cedar, cypress, or redwood works well. Plastic houses and gourds should be of thick (preferably UV-resistant) material, and should not allow light to filter through the walls. Translucency creates a "greenhouse effect" and the heat can be deadly for nestlings.

*The PMCA recommends crescent and other starling-resistant entrances.

A Starling-resistant Entrance Hole The crescent entrance was designed by landlord This diagram shows how to cut a starling-resistant entrance hole for Charles McEwen of your martin housing. Cut the hole with a jigsaw. Cut Moncton, NB. it slightly small, then file or sand it to proper height. Also, placement is important. The bottom of the entrance hole may be placed flush with, or not more than 1 ³/16" 1/4" above, the porch. If you have ever had starling problems, give this entrance a try. 3" circle-



Weather Protection: Martin houses should be placed in an open area and therefore will be exposed to wind, rain, and summer sun. Good ventilation, drainage and insulation are important features for successful nesting. Nestlings under 10 days old are unfeathered and prone to hypothermia, so it is important that they do not become chilled in a rainsoaked nest. Ventilation holes should be drilled at an upward angle or placed under the roof overhang to prevent water from funneling into the compartments. Drain holes in the bottom of each compartment or gourd will allow wet nests to dry more quickly. The roof overhang can be extended to help protect compartments from rain, and raised subfloors also offer protection. A layer of insulation in the attic of plastic or metal housing will protect martins during periods of extreme temperatures.

Keep Your House in Good Repair

In the fall, remove nests and scrub housing with a 10% bleach solution (1 part bleach to 9 parts water). Rinse and air dry before storing or closing for the winter. Take care of any needed repairs now, so you won't be caught unprepared next spring. All types of housing will last longer if stored indoors over the winter. If housing is left out, cover the house or plug the holes, otherwise House Sparrows and starlings will claim them in late winter and will be hard to dislodge next spring.





Whether a martin colony is located on a public park, at a school, or in your backyard, Purple Martins are vulnerable to predators. Here are some signs that predation has occurred at your colony site:

Hawks and owls: Multiple feathers or wings below martin housing; decoys turned upside down, or ripped off; doors of housing ripped off or opened; owl pellets (regurgitated pellets of non-digestible feathers and bones) below housing.

Snakes: Missing eggs or nestlings; snakeskin in cavity or below martin housing; snake inside cavity.

Raccoons: Blood on, or in, housing; wings or body parts scattered around martin housing.

How to Protect Against Predation

The best time to protect your Purple Martins is before there is a problem. Having predator guards in place will help prevent predation—guards should be installed on ALL active housing.

Conventional 6" x 6" compartments do not offer much protection from these predators, who can reach nestlings in shallow rooms. Larger compartments will allow martins to build their nests further from the entrance, and out of a predator's reach.

Pole Guards: Also called predator baffles, pole guards are cylindrical or conical shaped and help prevent raccoons or snakes from climbing up the pole. No matter if your pole is 12 or 20' tall, round or square, metal or wood, it can easily be climbed by snakes or raccoons. Pole guards are available (we recommend a quick release pole guard for ease of use) or you can make your own. Pole guards should measure at least 8" in diameter and 2' long and be installed at least 4' above ground.

Guards and Cages: While hawks will hunt during the day, owls hunt at night. Owl/hawk guards in front of the cavities and wire cages surrounding the cavities will help prevent the predator from grabbing nestlings and adults. Many owl and hawk guards are available. If commercial guards are not available, landlords can fasten hardware cloth (2" x 4" wire fencing) to the outside of the house or gourd rack, creating a protective cage that can be removed for nest checks and monitoring.





Housing: Make sure there are no wires leading from the ground or a building to the martin housing; keep the ground below the housing clear of tall vegetation where predators can hide.

Decoys: While mainly used as an attraction tool, decoys can also be used to distract hawks. Martin colonies can be noisy, especially around fledging time, and can be a draw for hawks. The hawks will usually go after the slowest moving 'martin' and while they are attacking the decoy, that will give the real Purple Martins a chance to escape.

Dealing with Nest-Site Competitors

Several species of cavity-nesting birds will nest in martin housing. Before the martins Sarrive in your area, you can discourage competitors by keeping your housing closed. After the martins have arrived, there are different strategies for dealing with the competitors, depending on the species.



Non-Native Species—House Sparrows and European Starlings

Both the House Sparrow and European Starling are non-native species and should never be permitted to nest in martin housing. They will take over martin compartments, destroy eggs and kill nestlings. They can also prevent martins from nesting and often injure or kill adults. Successful martin landlords **do not tolerate** these non-native competitors. Starlings and House Sparrows are not protected and may be legally controlled by trapping and/or shooting.

European Starlings are larger than a martin and have a long yellow beak. If you see a 'Purple Martin' at your birdfeeders or feeding on the ground, it's probably a starling.

Native Species—Bluebirds, Tree Swallows, House Wrens

If any of these native species try to nest in your martin housing, close it and put up a nestbox or gourd with a 1-1/2" entrance, placed about 30–50' from your martin housing. House Wrens use a 1" entrance. Do not close housing if they have eggs or nestlings. Re-open the martin housing once the new housing has been accepted by the competitor. Tree Swallows are smaller with a snow-white belly and an iridescent greenish/blue back. They will nest in bluebird boxes or gourds and sometimes take over martin housing. Tree Swallows line their nests with feathers; Purple Martin use green leaves.



How to manage Purple Martins

Doing weekly nest checks—lowering your Purple Martin housing, looking inside all the cavities and recording what you find—is one of the best ways to know what's happening at your martin colony. The ultimate goal of becoming a martin landlord is to secure Purple Martin populations for the future. Research shows that landlords who actively manage their housing have more success at attracting martins, greater numbers of fledglings, and better chances at increasing their colony size. Managing is also a fun, hands-on way to interact with your colony. Nest checks will not cause martins to abandon the colony site.

Nest Checks

Purple Martin colonies provide opportunities for interaction between you and the birds. Martins are unique wild animals in that they are very tolerant of humans, allowing us to be around their houses, nests and young. If your martin housing raises and lowers vertically (as it should), number the compartments, check the nests weekly, and keep written records. Regular nest checks will lead to early detection of problems. In addition, walk under the housing daily to look for plucked martin feathers, shed owl feathers, owl pellets, thrown-out nestlings, hatched eggshells, etc. The items you find are clues and may alert you to troubles that need your attention. As you monitor your birds, you can also count their eggs and later watch the nestlings grow! We urge you to register your colony site with the PMCA and to participate in Project MartinWatch. (www. purplemartin.org)

When: Start once the martins have begun bringing in nesting material. They will bring in green leaves to line the nest. Egglaying soon follows. You can lower the housing midday or during the afternoon. Avoid lowering during the early morning, evening and bad weather. Avoid the hottest and coolest time of day when eggs may need incubated or nestlings might require brooding.

How: Lower housing and check each cavity. Record the stage of nest building, number

of eggs and/or hatched young. Age nestlings using the PMCA's Prognosticator and Laminated Martin Photos—this is especially important if you don't know the date the first egg was laid. Make sure you don't miss any eggs hiding under nesting material. Aim to have each system down for no longer than 20 minutes. With larger systems you may have to spread a check out over the day or two days.

How Often: Nest checks every 4 or 5 days during egg laying will help you accurately record first egg dates and calculate projected hatching and fledging dates. Once egg laying is completed, checking nests every 5–7 days is sufficient. Avoid long gaps of 10–14 days between checks. Continue nest checks until all young have fledged.





Laminated Martin Photos are great tools for nest checks. Visit shop.purplemartin.org to buy a complete set.





Problems you may find during nest checks

Premature Fledglings: Nestlings may fledge prematurely, before they are 26 days old, for several reasons; overcrowding, nest parasites, hot temperatures. If you do not know where the nestling came from, lower down the housing and place the nestlings in a cavity that contains 4 or fewer nestlings that are the same size.

To avoid premature fledging during nest checks (nestlings leaving the nest before they can properly fly) keep checks on nestlings 22 days or older very brief. Use the plug and string method to keep older nestlings safely inside throughout the nest check. Tie a string around a plug, long enough to reach the ground with the system raised. Quietly lower the system and plug the cavities containing nestlings 22 days and older.

Once you have completed the nest check, raise the system and wait 5–10 minutes for the nestlings to settle down. Gently tug on the strings to remove the plugs.

Once the system is raised, walk all around the housing. Make sure all the doors are closed and caps on the gourds and all plugs are removed.

Capped Eggs: Half of a hatched eggshell is stuck onto an unhatched egg. The nestling in the capped egg will die if it cannot break through the extra shell. The cap can be carefully removed and the egg may still hatch if discovered soon enough.

> **Parasites:** Nest mites are most common. Northern landlords may also find blowfly larvae. Do not spray housing with insecticide or cleaning products. Place nestlings in bucket and cover it, remove nest material, wipe inside and outside of compartment with damp paper towel. Add new nest material and replace nestlings.

Supply These Aids

Crushed eggshells or oyster shells* are a valuable dietary supplement that supplies calcium and grit. Offer it all season in an elevated platform feeder. Eggshells should be rinsed, dried thoroughly in a 200 degree oven to kill bacteria, then crushed into small pieces. During weather extremes provide supplemental food such as crickets, mealworms and cooked eggs. Landlords can supply nest material by scattering dried pine needles, dry twigs, or a bale of straw on the ground or a tall platform, or placing the material inside the cavities, and creating a supply of mud nearby.

Being Prepared for Problems

Keep the phone number of a licensed wildlife rehabilitator or your state wildlife agency on hand in case of sick or injured birds. Place fall-outs back in their own nest (your records will help.) If it is not possible to put them back in, take them to a rehabber. Do not move nestlings to another compartment. Do not try to raise them yourself; it is illegal and your good intentions cannot replace the experience of a specialist. If parasites or wet nests threaten the survival of nestlings, replace the nest



material with clean, dry wood shavings or pine straw. Never use pesticides in the nest boxes; it is not legal or safe for the birds.

*You can find these products at our Martin Market Place® at shop.purplemartin.org



Handling Extreme Temperatures

Weather can play a large factor in the year-to-year success of the Purple Martin population. Since Purple Martins are aerial insectivores—meaning they catch all of their insects in flight—they are extremely vulnerable to weather conditions such as excessive cold, heat or drought.

Cold/Wet Weather

Purple Martins are adversely affected by weather in which the temperature is constantly below about 48° for three days, or there is constant rain for a period longer than three days. The martins' dietary staple, flying insects, do not fly in these conditions, and after three to four days, martins will begin to die from starvation.

Supplemental Feeding—Although martins normally catch their insects while flying, they can be trained to accept supplemental food.

What to Feed:

- Crickets—work best when first starting since they more closely resemble their natural food;
- Mealworms—can be given live or dried;
- Scrambled eggs—best after the martins have accepted crickets or mealworms.

How to Feed:

- **Tossing**—may be best method for firsttime feeders. Use a spoon to launch or hand-toss crickets or mealworms into the air. Works best when martins are hungry enough to pursue the food, but not too weak to go after it.
- **Platform Feeding**—Many landlords transition their birds to platform feeding after they have first eaten tossed food. Tossing food right above the feeder encourages martins to land on the feeder.
- In-Cavity Feeding—Place mealworms or crickets inside a gourd or compartment. Landlords can use dried or thawed insects. Can also be placed in shallow dishes and fastened to porch, cavity floor or interior walls.

Heating—If you have unoccupied cavities, place a light bulb or hand warmers inside the cavity, making sure that the entrance is blocked so martins cannot enter.



Observation—Cold weather will also lead to "communal cavity roosting" by martins, i.e., many birds will congregate in one nest cavity for warmth. During times of severe weather, the bird closest to the entrance may die, preventing the other martins from leaving. Make sure the entrances are not blocked.



Heat/Drought

Especially in southern parts of the Purple Martins' breeding range, excessive heat and drought, day after day, can be deadly, especially for nestling martins who may be hungry and heat-stressed. Beyond providing housing that is opaque and painted white, some of the easiest ways to offer relief to your nesters are shading, ventilation, insulation, and cooling.

Shading—Installing something that helps shade the housing can offer relief from high temperatures. Look for commercial products such as shadecloth and solar screening to add lightweight shade above houses and gourd racks. Also, shade panels placed above roofs and on sunny sides of houses, can offer cooling and ventilated shade.

Ventilation—Adding ventilation to housing can be done before the martin season starts. Ventilation holes can be drilled into houses, either on the back, sides or front of the compartments. Ventilation can be added up under roof overhang, or to attic spaces. *Elbow vents can be added to gourds. To keep rain out, drill vent holes from the outside and at an upward angle.

Insulation—Insulate sunny sides of housing, attics, and roof, using styrofoam board or foam insulation.

Cooling—For quick and inexpensive cooling, place frozen ice packs in empty rooms adjacent to, or above occupied compartments. Water misters can also provide heat relief; taking care that the water does not spray into nests.

*Buy elbow vents at our Martin Market Place® at shop.purplemartin.org



Participate in PMCA Citizen-Science Projects Scout-Arrival Study

How to participate: Add your scout arrival dates to the PMCA's Scout-Arrival Study. We

will add your dates to our scientific database, so others can track the northward migration of martins. You can submit your scout dates using the report form on our web site. You can also phone, e-mail, fax, or mail us your scout date for this year. To track the daily northward migration of the Purple Martin this year, visit our web site at **purplemartin.** org/scoutreport.

The black lines on the map mark the average first-arrival dates of older adult martins at established colony sites.

Landlords with younger or smaller colonies will typically experience slightly later return dates. Arrivals continue for an additional 12–16 weeks. The martins' northward advance coincides with warming temperatures that support the emergence of the flying insects they eat.

Project MartinWatch

Since 1995, the PMCA has been coordinating the continent wide investigation known as "Project MartinWatch." Participants monitor nests, record the information, and send them to the PMCA at season's end. Project MartinWatch allows us to obtain information on the range-wide reproductive success of Purple Martins.

How to Help

You can become involved by establishing a martin colony of your own or teaming



Purple Martin migration map

up with a neighbor, an organization, or the PMCA to help monitor one of their colonies. Follow the directions on our website to learn more.

At the end of the nesting season submit your report to the PMCA. Your observations will be added to those of hundreds of other Project MartinWatch participants in the continually growing database used by biologists to understand and study Purple Martins. Without your help it would be impossible to gather enough information to accurately monitor martins across the country. And while you are contributing extremely valuable information to science, you will learn first-hand about these amazing birds and create a lifelong bond with the natural world.

How to Help

Purple Martin populations are undergoing long-term declines in many parts of North America. As a non-profit organization, the PMCA works to increase populations through education and research but we need your help!

purplemartin.org/how-to-help



Join Us Today!

With your support, the PMCA will be able to continue providing educational information, assisting landlords, conducting scientific research, and building the community to help keep Purple Martin populations strong. Your support will make a difference in the future of Purple Martins. Join the PMCA at *www.purplemartin.org* and enjoy:

Four issues of *The Purple Martin Update*, a uniquely valuable resource that features diverse articles on Purple Martins, martin landlords and their colonies, research and education projects, conservation issues, and practical information that you can apply in your own colony.

Opportunities to contribute to our citizen-science programs such as Scout-Arrival Study, Project MartinWatch and Project MartinRoost.



Discounts on all items in the Martin Market Place[®], the product catalog of the PMCA which contains martin products including gourds, houses, poles, traps, attraction tools, and much more.

Joining a community of thousands of Purple Martin enthusiasts working together to increase martin populations.

Thank you for ensuring the future of Purple Martins!

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