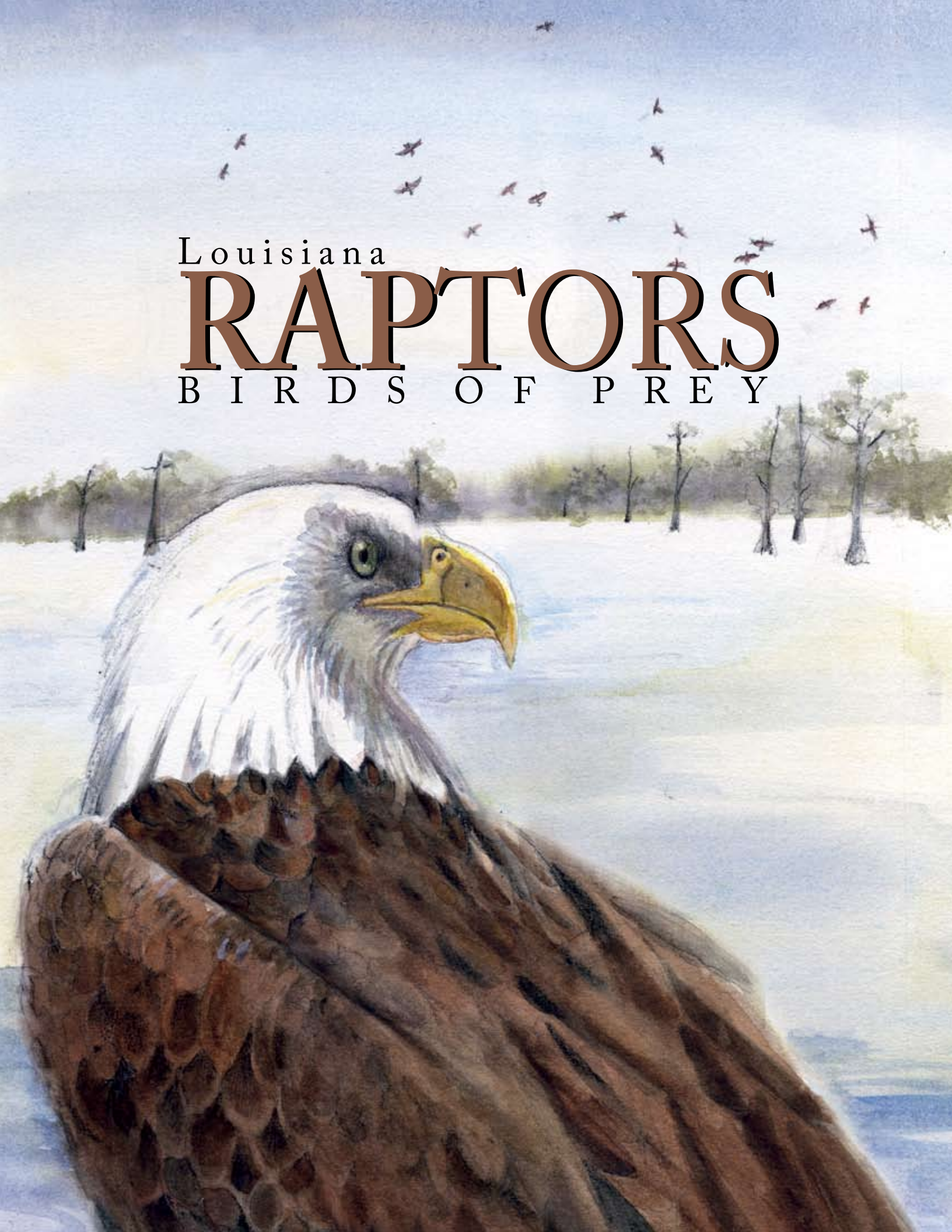

Louisiana
RAPTORS
BIRDS OF PREY

Louisiana RAPTORS
BIRDS OF PREY

Written by
Donna L. Dittmann
Steven W. Cardiff
Richard DeMay

Designed and Illustrated by
Diane K. Baker

Photography by
Darlene Boucher
Charlie Hohorst
Greg Lavaty

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

The Estuary Program would like to thank the many members of the “Protection of Habitat for Migratory and Resident Bird” Action Plan Team for their tireless support and commitment to “making things happen”. It is that support and commitment that is the strength of the Estuary Program.

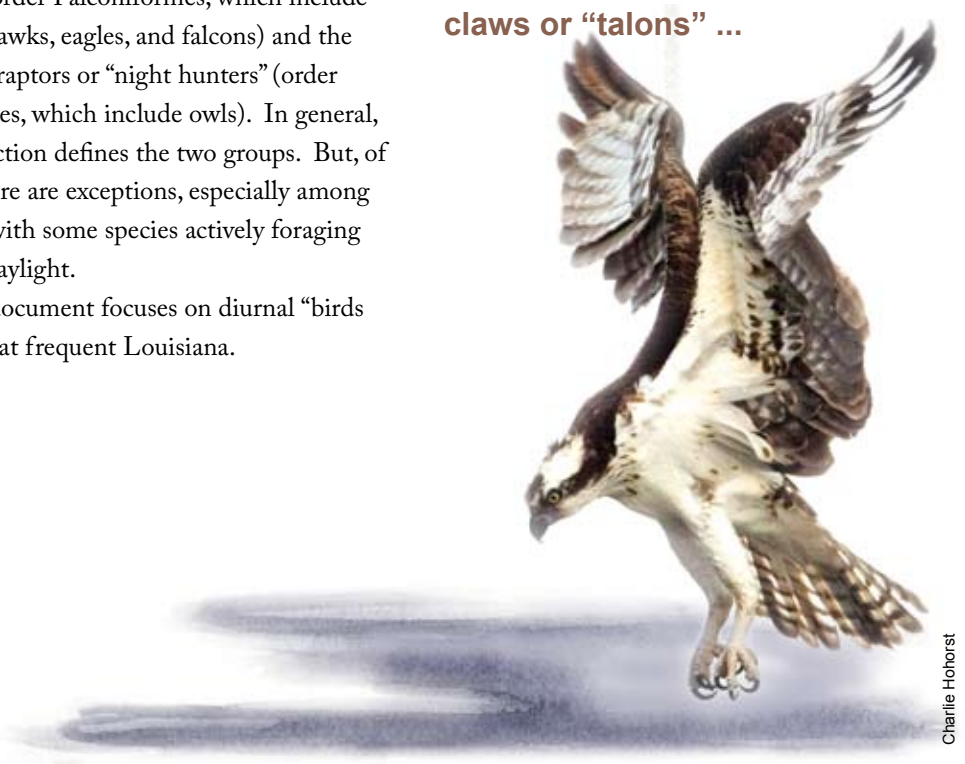
What is a raptor?

Many different kinds of birds prey on other animals. For example, pelicans capture and eat fish, flycatchers take insects, and sandpipers probe for aquatic invertebrates. But, one group of birds stands out as the ultimate aerial predator. These are the raptors or "birds of prey," and they all share a specialized set of characteristics that better equip them for locating, pursuing, capturing, and killing prey. Perhaps the most prominent features of most raptor species are strong legs and feet, combined with toes that are equipped with sharp, curved, and strong claws or "talons". Talons are used as the primary weapon for capturing, gripping, and dispatching prey. Most raptors have a sharp, hooked bill, which can also be used to kill prey swiftly. More often, however, the bill is used as an efficient means to tear flesh from a carcass.

Raptors include two unrelated orders of birds, most easily separated by their general daily activities: the diurnal raptors or "day hunters" (order Falconiformes, which include vultures, hawks, eagles, and falcons) and the nocturnal raptors or "night hunters" (order Strigiformes, which include owls). In general, this distinction defines the two groups. But, of course, there are exceptions, especially among the owls, with some species actively foraging in broad daylight.

This document focuses on diurnal "birds of prey" that frequent Louisiana.

Perhaps the most prominent features of most raptor species are strong legs and feet, combined with toes that are equipped with sharp, curved, and strong claws or "talons" ...



Charlie Hohorst

Greg Lavaty

Louisiana's diurnal raptors

Twenty-five species of Falconiformes have occurred in Louisiana. An amazing 16 species breed, or have bred, in our state. Twelve species are regular breeders- Black and Turkey vultures, Mississippi and Swallow-tailed kites, Cooper's, Red-shouldered, Broad-winged, and Red-tailed hawks, Bald Eagle, Osprey, Crested Caracara, and American Kestrel. Swainson's Hawk can probably be placed in this group, but regular breeding needs further confirmation. There are a few modern nesting records for White-tailed Kite and Sharp-shinned Hawk, and there is one old nesting record of Peregrine Falcon.

Nine species, including some breeding species, are much more regular in winter or as migrants: White-tailed Kite, Northern Harrier, Sharp-shinned Hawk, Cooper's Hawk, Red-tailed Hawk, Swainson's Hawk, American Kestrel, Merlin, and Peregrine Falcon. Seven additional species are considered vagrants: Northern Goshawk (one record), Harris's Hawk (a few records), Zone-tailed Hawk (one record), White-tailed Hawk (a few records), Ferruginous Hawk (a few records), Rough-legged Hawk (a few records), and Golden Eagle (rare fall migrant and winter visitor). Vagrants represent strays outside a species' normal geographic distribution and, therefore, are unexpected in Louisiana; these species may occur from less than annually up to a few times per year.

Only a few of the hawk species that occur in Louisiana are year-round residents. Even those species considered "resident" may not in fact spend the entire year in one place: local birds may move out and be replaced by individuals that have bred elsewhere. Movements are generally driven by availability of food resources. Species which rely heavily on insects and reptiles are essentially forced to relocate to warmer southern regions because their prey becomes unavailable during the colder northern winter months. Many raptors that depend on small rodents cannot find prey in regions where snow can accumulate on the ground. The Northern Harrier represents one extreme, because it is relatively nomadic and shows year-to-year flexibility in finding

Greg Lavaty

Charlie Hohorst

wintering and breeding sites with high prey densities. Most species, however, show much stronger "site fidelity," returning to the same general breeding and wintering territories, sometimes even to the same nest, year after year. Migrant species include some of our longest distance Neotropical migrants: Peregrine Falcon (Arctic tundra to temperate South America) and Swallow-tailed Kite (southeastern United States to Amazonia). Swallow-tailed Kite, along with Mississippi Kite and Broad-winged Hawk are referred to as "complete migrants," meaning no individuals remain to winter in breeding areas. Northern populations of other species, such as Red-shouldered and Red-tailed hawks, are "partial migrants" shifting south in winter to southern portions of the breeding distribution but not much beyond, and potentially winter ing side-by-side with more sedentary southern breeders. In general, individuals that breed at the northern extreme of a species' range move south in winter. The notable exception is the southern Bald Eagle, which breeds during the winter and then moves north to spend the summer and fall. Some species, such as the Broad-winged Hawk, migrate in large flocks, and circling "kettles" can number into the hundreds or thousands of individuals. These birds can be observed during southbound flights following the first series of early fall cold fronts, their movement facilitated by strong tail winds.

Charlie Hohorst

In Louisiana, raptors are found in a variety of habitats, from dense forest to open agricultural areas, coastal marshes, and beaches. Peregrine Falcons even use offshore oil platforms during migration and winter for roost and feeding sites. Distributions and population densities of breeding species tend to remain relatively stable from year to year as they depend on appropriate habitat and a stable prey base. Densities of some wintering species can fluctuate substantially from year to year depending on local or larger-scale fluctuations of prey densities. For example, species such as Red-tailed Hawk and Northern Harrier can be numerous one year and then much scarcer the next on a local or regional scale depending on rodent abundance. In Louisiana, numbers can also be influenced by the relative mildness or harshness of the winter in areas to our north, which can either allow more birds to remain farther north or drive more birds to the south.

In Louisiana, raptors are found in a variety of habitats, from dense forest to open agricultural areas, coastal marshes, and beaches.

Greg Lavaty

Identifying Louisiana's Diurnal Raptors

Most raptors are fairly easy to pigeon-hole to general type (e.g., vulture, eagle, falcon, *Buteo*, or *Accipiter*) based on size, shape, and proportions. The use of genus name, as for the latter two italicized names, is frequently used to refer to more closely related and very similar-looking species in the same genus. For example, two species in the genus *Accipiter*, Sharp-shinned Hawk (*Accipiter striatus*) and Cooper's Hawk (*Accipiter cooperi*), are closely related and have very similar shapes, proportions, plumages, and behaviors. They are so similar that they can be positively identified to species only by fairly experienced observers who get a close look. However, they can more easily be classified into the more general category "Accipiter" type of hawk (in Louisiana "Sharp-shinned/Cooper's hawk") based on the combination of thin body shape, short rounded wings, long narrow tail, and long thin legs.

Raptors come in four basic body shapes... From these basics we can further refine shape and add behaviors, such as flight style.

Raptors come in four "basic body shapes": long broad wings and broad tail (eagles, vultures, *Buteo*, Osprey), shorter rounded wings and long tail (*Accipiter*), long rounded wings and long tail (harrier, caracara), and long pointed wings (kites and falcons). From these 'basics' we can further refine shape and add behaviors, such as flight style, to narrow down our choices and identify a raptor to species.

The size range of most raptor species varies because of size differences between the sexes ("reverse sexual size dimorphism"- fe-

Four basic body shapes of raptors.

Golden Eagle

Cooper's Hawk

Northern Harrier

Mississippi Kite

males are larger than males). However, in the field such differences are not often appreciated unless a male and female are perched together, such as a pair at a nest. Notable exceptions are species in the genus *Accipiter*, which exhibit pronounced size dimorphism: the larger female Sharp-shinned is essentially the same size as the smaller male Cooper's. In this case, size is a very important identification character.

As would be expected for such highly specialized hunters, most raptor species are clad in relatively camouflaged plumage (black, browns, grays, and white) that helps them blend in with their surroundings; a few species are somewhat more colorful, with bluish or reddish patterning. Additionally, most raptor species possess a distinct (different from the adult) first set of feathers referred to as Juvenal plumage. Young raptors fledge the nest in Juvenal Plumage and retain this set of feathers through their first winter and spring. Thus, most species acquire adult plumage during their second (calendar) year, this molt beginning when they are about one year old. The Juvenale plumage (for many species) is replaced by the adult (or Definitive) plumage. Subsequently, year after year and following each annual complete molt of feathers (always at the same time in the year), the appearance of adult plumage remains the same. Other species exhibit delayed maturation and there may be several additional molts and intermediate-looking plumages over a period of several years prior to attaining adult plumage. For example, the Bald Eagle has an extended plumage maturation period and does not attain adult plumage until the fifth year. In a few species (e.g., American Kestrel), plumage of males and females is different.

Greg Lavaty

A Red-shouldered Hawk displaying adult plumage.

Breeding Behavior

As a diverse group of birds, raptors have many interesting behaviors. Raptors are primarily monogamous (where a male and female mate for life) but a few species are polygymous (one male may bond and breed with multiple females in a single season). Type of nest and choice of nest site vary widely from species to species; ranging from construction of an elaborate stick nest placed in a tree or on a cliff ledge, to more minimal nests constructed in cavities or on the ground, to eggs laid on bare substrate with no nest at all. Most raptors, especially large species, lay a single clutch of eggs per season and the number of eggs per clutch can range from one to four eggs, depending on the species. Care of young is more intensive than for other birds, with young often remaining with the parents for extended periods after fledging. Eggs are proportionately rather large relative to the bird's size, and chicks hatch fully covered with down.

Darlene Boucher

As exhibited by this pair of Red-shouldered Hawks, the plumage of male and female hawks of many species is similar in appearance.

As mentioned before, most raptors exhibit reverse sexual size dimorphism, with the size difference quite pronounced in some species. One hypothesis regarding this phenomenon is that adult females are less likely to be injured by the male during courtship. Generally, males and females are similar in appearance; a few species have sexual plumage differences, and in this case, males are more brightly colored. What raptors lack in colorful plumage is compensated for by spectacular acrobatic aerial displays, which may include dives, rolls, and interlocked talons. As with most other groups of birds in the Northern Hemisphere, many raptor species or populations migrate to and from breeding and non-breeding areas, and some raptors rank among the longest distance migrants of all birds.

Darlene Boucher

Raptors relationships with humans-are raptors beneficial?

Whether depicted as a symbol of power by primitive cultures in cave drawings, celebrated in various passages in the Bible, a treasured pet and hunting companion through the centuries, or feared and demonized as varmints, raptors have a very long association with humans. More recently, following colonization of North America by European settlers, raptors were often the target of wanton destruction, their elimination perceived to protect assets: fish, game birds, and domestic poultry. Early "conservation studies" analyzed stomach contents or regurgitated pellets, and species were declared "good birds" (those that ate insects and rodents), or "bad birds" (those whose diet included game birds, chickens, or songbirds). Of course, we now know that most species have varied diets, which may change by season or availability of resources. Unfortunately, the first conservation laws in the United States protected only good birds and allowed the slaughter of bad birds, with the additional incentive of bounties placed on 'bad bird' carcasses. This approach put many species at risk and large numbers of hawks were killed for no reason other than being a hawk. Many were killed during migration as flocks passed over promontories along migration corridors.

Unfortunately, the first conservation laws in the United States protected only good birds and allowed the slaughter of bad birds, with the additional incentive of bounties placed on 'bad bird' carcasses.

Large numbers of hawks were killed for no reason other than being a hawk.

Darlene Boucher

In 1940, the United States enacted the first federal law, the National Emblem Law, to protect the Bald Eagle (although this protection did not extend to Alaska). This law was amended in 1962 to add the Golden Eagle.

Although the Migratory Bird Treaty Act of 1916 protected some species of birds, raptors were not included. Legal protection was slow in coming. In 1940, the United States enacted the first federal law, the National Emblem Law, to protect the Bald Eagle (although this protection did not extend to Alaska). This law was amended in 1962 to add the Golden Eagle. But it was not until amendment of the Migratory Bird Treaty Act on March 10, 1972, that protection was extended to the other raptor species. Most people now realize the beneficial nature of raptors and most predators in general.

Raptors and scavengers are beneficial in that they provide a "cleaning service" of sorts - they will typically go after the prey that is easiest to catch, which is usually the less healthy, less "fit" individuals in a population. Vultures are the extreme example of natural sanitation, doing us a favor by recycling dead and decaying animals and removing them from the environment. By weeding-out the sick or more vulnerable prey individuals, and by thinning out prey species that periodically overpopulate and overwhelm their own resources, raptors help maintain a natural balance. As "top of the food chain" predators that are sensitive to ecological disruptions, raptors are often among the first and best indicators of environmental problems that can also impact human health. And, finally, as handsome, often conspicuous, highly developed aerial predators, raptors are good and necessary because they provide us with entertainment, enjoyment, and inspiration.

As George H. Lowery, Jr. said in Louisiana Birds, hawks "perform an invaluable role in the natural scheme of things, that they help keep the populations of their prey healthy and well-conditioned by weeding out individuals that are either sick or otherwise substandard." For sportsmen, hawks make their hunt more sporting.

Following the removal of DDT from use, many species showed dramatic recovery. Unfortunately, the Pregrine Falcon needed additional assistance because many populations disappeared or were reduced to very low numbers.

Pesticides

The plight of North American raptors following the introduction and use from the late 1940's until 1972 of persistent synthetic organochlorine pesticides, specifically DDT (Dichloro-Diphenyl-Trichloroethane), is well-publicized and dramatically reported in Silent Spring, released in 1962 by Rachel Carson. Silent Spring is credited as key to launching the environmental movement, in part to protect wildlife but also stressing that the environment and welfare of wildlife is directly linked to human health. Raptors, as top predators in the food chain, represent an indicator of environmental health. During the DDT era, and within a very short amount of time following its release and appearance in the environment, raptor populations showed declines and numbers of some species plummeted at a rapid pace. Raptors gradually built up lethal concentrations of DDT from prey and perhaps also directly from the environment. For those individuals that did not die immediately from poisoning (when poison levels were high enough) exposure resulted in chemicals being stored in fatty tissue where they disrupted various body functions. Contaminants became increasingly concentrated as the chemical "moved up the food chain," ultimately causing the greatest impact on top predators.

Osprey egg

Greg Lavaty

Bald Eagles, Peregrine Falcons, and Ospreys had complete reproductive failure in many local populations due to the presence of DDT in the environment and its concentration in top predators.

Charlie Hohorst

Predators that consumed fish or consumed other animals that consumed fish were affected the worse. High concentrations of the chemicals in the body were correlated with depressed reproductive success. The most notable manifestation of pesticide contamination was the production of a thin eggshell - a thin-shelled egg is easily crushed under the weight of an incubating adult bird. Bald Eagles, Peregrine Falcons, and Ospreys had complete reproductive failure in many local populations. Following removal of DDT from use, many populations showed dramatic recovery. However, some species such as the Peregrine Falcon necessitated additional assistance, and numbers in the wild were augmented by release of captive-raised young.

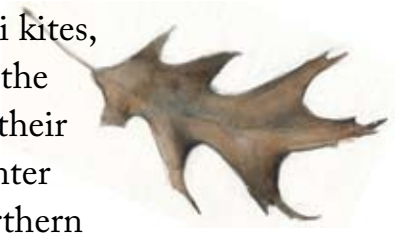
Some birds today are still contaminated with DDE especially in areas of heavy past use. Raptors, by virtue of their position at the top of the food chain, also show high levels of other chemicals. Some Ospreys examined for chemicals show high concentrations of PCBs, heptachlor, dioxins, dieldrin, chlorodanes, lead, or mercury. Though none of these chemicals have thus been implicated in reproductive failures, keeping a watchful eye on the health of our raptors (and other birds) is a means to provide an index to environmental and, ultimately, human health.

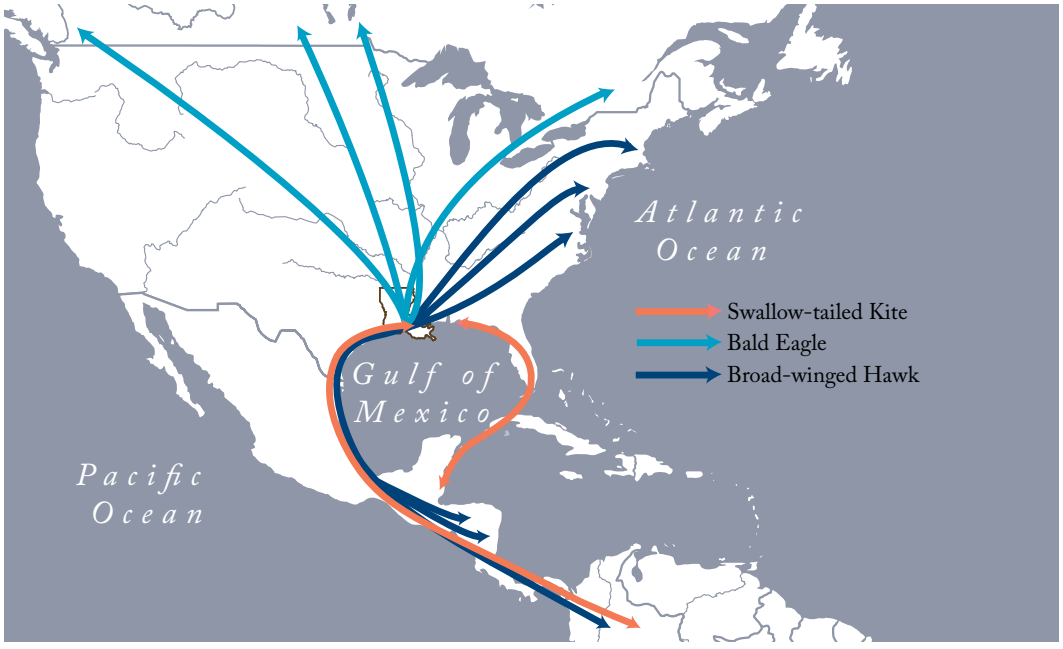
Some Ospreys examined for chemicals show high concentrations of PCBs, heptachlor, dioxins, dieldrin, chlorodanes, lead, or mercury.

Greg Lavaty

Regularly Occurring Species

Eighteen of Louisiana's 25 recorded species of diurnal raptors can be considered regular in occurrence, at least locally or seasonally. Almost every species has a unique "status" in the state based on a combination of seasonal presence, abundance, and breeding, wintering, and migratory patterns, but some loose categories can be applied. Eight species are present year-round and breed in at least a portion of the state and at least in modest numbers: Black and Turkey vultures, Osprey, Cooper's, Red-shouldered and Red-tailed hawks, Crested Caracara, and American Kestrel. Swallow-tailed and Mississippi kites, and Broad-winged and Swainson's hawks are only found during the summer nesting period as well as during migration to and from their South American wintering grounds. Primarily found during winter and migration are White-tailed Kite, Sharp-shinned Hawk, Northern Harrier, Merlin, and Peregrine Falcon. White-tailed Kite, Swainson's Hawk, and Crested Caracara also share a primarily southwestern distribution in Louisiana. The Bald Eagle is in a category by itself, breeding here through the winter and then largely vacating the state for points north during the summer.





Three of Louisiana's raptors use complex migratory pathways. Many Broad-winged Hawks and substantial numbers of Swallow-tailed Kites are "western circum-gulf" migrants. Alternatively, some Swallow-tailed Kites use a more easterly "Caribbean-eastern circum-gulf" route. In contrast, Louisiana's Bald Eagles nest during the winter and then spend summers north.

Red-tailed Hawk

(Buteo jamaicensis)

The adult Red-tailed Hawk in flight displays the conspicuous reddish brown tail for which it is named; immatures have a brown banded black tail and yellow eyes as shown in the inset opposite page.

Perhaps our commonest and most conspicuous winter raptor is the Red-tailed Hawk, which can be found in most habitats throughout the state. In winter, these birds are most abundant in open farmland and semi-open pastureland with a good supply of rodent prey, and most everyone is familiar with this species perched atop a dead snag, fencepost, or roadside utility pole. Such vantage points allow a hawk to use its exceptionally keen eyesight to patiently scan the surroundings for a potential meal. Prey, perhaps an unsuspecting rat or snake, are usually taken on the ground as the hawk makes a beeline from its perch. Red-taileds also hunt on the wing and can often be seen soaring, or hovering on flapping wings, above areas that harbor prey. Its shrill, descending scream "keeeaaarrrr" is an often-heard background sound on TV shows and in movies.

Weighing in at between 24 and 52 ounces, with a wingspan of 3 1/2 to 4 1/2 feet and a length of 17 to 26 inches, this is our largest species of hawk in the genus *Buteo,* and only eagles and vultures are larger. Female Red-tailed Hawks are larger than males. This species is relatively heavily built with long, broad wings and a short, broad tail. The diagnostic plumage character of most adults is the trademark reddish brown tail, for which the species is named.

Birds that breed in Louisiana and most of our wintering individuals belong to the widespread eastern subspecies *B. j. borealis* and are predominantly typical "light morph" birds. Other "morphs" are rare or absent among our breeding population. In winter, however, a fair number of "pale morph" individuals, and the occasional "dark morph" bird, can be found here. These "pale morph" birds are referred to as "Krider's" Red-tailed Hawk, which is considered by some authorities as a distinct subspecies (*B. j. krideri*).

Red-tailed Hawks are only found in North America, Central America and the West Indies. The species' scientific name, *jamaicensis*, refers to Jamaica, where the first specimen was collected. Across this broad range, populations show a great deal of variation with 16 named subspecies.

In Louisiana, Red-tailed Hawks nest primarily in pinewoods regions and the northern portion of the state, but small numbers breed south roughly to the western I-10 corridor east to the Lafayette and Baton Rouge areas, and even as far as the Thibodaux area. Breeders are understandably absent from the coast and from the forested and flooded areas of the Atchafalaya Basin (where the foraging habitat is not suitable).

Red-tailed Hawks are monogamous and mate for life. Courtship acrobatics include spectacular aerial displays by both the male and female (circling with legs dangling, dives, spirals towards the ground with talons interlocked, etc.). The large stick nest is usually situated in the crotch of a large live tree. There is one brood per season, and two to five all white or brown-speckled eggs are laid in late March to mid-April. Although both parents take turns incubating the eggs, the female tends to spend more time at the nest and the male provisions food for the female (and later for the chicks). Chicks hatch approximately a month later, and fledge after 42 to 46 days but remain under parental supervision for another six weeks.

Red-tailed Hawks are very beneficial, a true "friend of the farmer." Its diet consists mostly of small to medium-sized mammals, primarily rodents (rats and mice) and rabbits, reptiles (especially snakes), and occasionally birds (very rarely poultry). Prey items are relatively small so that the hawk can carry them off to a nest or to a safer perch.

Greg Lavaty

Louisiana RAPTORS Birds of Prey

Bald Eagle

(Haliaeetus leucocephalus)

Important to Native Americans as a religious or spiritual symbol, the Bald Eagle is our national emblem and one of our most recognizable birds. It is the largest U.S. raptor excluding the California Condor. Of course, Bald Eagles don't actually have bald featherless heads! Instead, the name is derived from its contrasting white head and black body plumage, referred to as a "piebald" pattern, which then was shortened to "bald;" or, alternatively, "balled" meaning "gleaming white." The adult plumage of a Bald Eagle is blackish brown with a white head and white tail. The eyes, bill, cere, legs, and feet are yellow and the toes are tipped with impressive black talons. Young Bald Eagles are wholly dark except for white mottled under wing linings and white mottled on the base of the tail. Young eagles take at least five years to attain adult plumage. Following molt of the juvenile plumage, each successive annual molt becomes progressively more adult-like.

Bald Eagles are patchily distributed throughout North America south to northern Mexico and Baja California. The current recovered population occupies most of the historical range and is approaching the historical abundance. In Louisiana, the species breeds primarily in the southeastern portion of the state in the vicinity of larger river systems. The largest concentrations are in the Atchafalaya, Mississippi, and Pearl river basins. Smaller numbers occur to the north at Cypress Bayou Reservoir near Shreveport, in the vicinity of Lake D'Arbonne, and in Morehouse Parish, and to the southwest along the Sabine River in Sabine and Calcasieu parishes. Bald Eagles breed near bodies of water with

The Bald Eagle is our national emblem and one of our more recognizable birds.

Darlene Boucher

Darlene Boucher

Eagles are monogamous and believed to pair for life.

abundant fish resources. Their large nests are usually placed high in the crotch of a tree often isolated from human disturbance. Bald Eagle nests, which are constructed of large sticks, are considered the largest among all birds. Construction of these nests usually begins one to three months before egg-laying and often these nests are reused year after year. Bald Eagles have spectacular courtship rituals where the pair will lock talons in flight and roll as they fall from the sky. Pairs will also fly high, fold their wings, then plummet towards the earth, only to spread their wings just before they hit the ground.

Eagles are monogamous and believed to pair for life, but whether a pair bond extends for more than a year is generally unknown because adults are difficult to capture and mark. One of the more remarkable aspects of Bald Eagles breeding in Louisiana is that they nest during the winter. One to three (two on average) dull white eggs are laid during the fall of each year. Incubation begins with the first egg and lasts approximately 35 days with most chicks appearing around Christmas. Chicks emerge from the egg covered with light gray down followed by a second downy plumage that comes in at ten days. Juvenal plumage follows in four to five weeks.

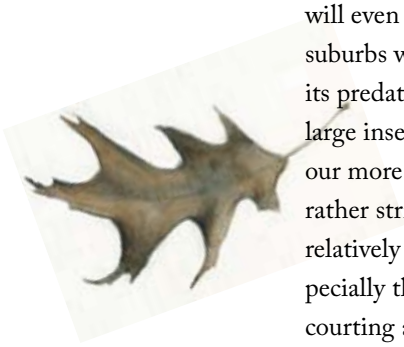
Bald Eagles consume a variety of prey including mammals, birds, reptiles, and even carrion, but fish are by far their favorite. Fish species taken are typically those that occur near the water surface, or those already dead or dying. Most fish and other prey are primarily detected from the air and then snatched with the talons after a well-executed dive, but other hunting techniques can include surveillance from an elevated perch or actually patrolling a short distance on foot at water's edge or even wading into shallow water. Bald Eagles are highly opportunistic and will take advantage of fish kills, either natural or human-induced. Eagles also take wounded or dead waterfowl and are not above stealing food from other predators (birds and mammals), especially Ospreys or other eagles.

Greg Lavaty

Bald eagle displaying juvenile plumage.

Red-shouldered Hawk

(Buteo lineatus)



This medium-sized *Buteo* is a year round resident of bottomland deciduous forest, woodlands, and swamps throughout much of Louisiana and is arguably the most common of our breeding diurnal raptors. Possessing a fairly high tolerance to disturbance, they will even nest in some well-wooded rural suburbs where human neighbors benefit from its predations on snakes, small mammals, and large insects. Red-shouldered is also one of our more recognizable hawks due both to the rather striking plumage of the adult and the relatively noisy nature of this bird. This is especially the case during spring when pairs are courting and delineating and defending their territories. On clear days, territorial birds will circle above the treetops giving loud series of 'cleeer-cleeer-cleeer' calls as they intercept other raptors and escort them out of their airspace.

Red-shouldered Hawks are about a third smaller than a Red-tailed Hawk, approximately 18 to 26 inches in length, with a wingspan of 37 to 44 inches, and weighing about one to two pounds. Like the Red-tailed, this *Buteo* has broad rounded wings and a broad tail used for soaring and/or maneuvering through the mid-story and forest canopy. Named for the rusty red patch of feathers on the shoulder, the adult is a beautifully colored hawk, with a boldly black-and-white barred tail, black and white spotted wing feathers, barred reddish under parts, and light rusty orange under wing linings. The general coloration of the head is variable from brown to brownish-gray. The eye is brown, and the yellow cere, legs, and feet contrast with the blackish bill and talons. This North American raptor is widely distributed in the eastern half of the country with an isolated resident population along the West Coast in California. Northern populations of this species are migratory and spend the winter in the southeastern United States and northern Mexico. As a breeding bird in Louisiana, it is found throughout the state in wooded/riparian habitats but is generally absent from the coastal chenieres. During fall migration, northern breeders pass through the state with some remaining to winter in smaller woodlots including cheniere woodlands along the immediate coast.

In Louisiana, courtship begins as early as December. The noisy process involves both birds flying high above the forest canopy, calling as many as 15 – 25 times. The nest of a Red-shouldered consists of a large platform of sticks, lined with leaves and Spanish moss and placed in the main crotch of a large living tree. Red-shouldered Hawks lay a single clutch of two to four brown-speckled white eggs in March of each year and are known to re-nest if the first nest or clutch of eggs is destroyed. As in most species of raptors, incubation begins after the first egg is laid and the eggs hatch asynchronously about one month later. The eggs and young are brooded almost exclusively by the female, while the male provisions food to the female and young. The down-clad nestlings begin to grow in their juvenile plumage at about one week of age. Young Red-shouldereds grow quickly and are ready to leave the nest about 35 days after hatching—still with some down on their head and with flight feathers still not fully grown. A rather diverse diet includes a variety of small animals that occur within its habitat: rats, mice, snakes, lizards, frogs, crawfish, and a variety of large insects such as cicadas and katydids.

Greg Lavaty

Named for the rusty red patch of feathers on the shoulder, adult Red-shouldered hawks are beautifully colored, with a boldly black-and-white barred tail, black and white spotted wing feathers, barred reddish under parts, and light rusty orange under wing linings.

Swallow-tailed Kite

(Elanoides forficatus)

There are few sights in Louisiana as inspiring as that of one or more soaring Swallow-tailed Kites, gracefully circling above Spanish moss-laden cypress trees. Their striking black, blue-gray, and white plumage shimmers in the sun as they maneuver effortlessly over the forest canopy. The combination of long, pointed wings, and the long, deeply forked "swallow" tail- used "scissors-like" for additional maneuvering precision- gives this species unexcelled aerial prowess. Unfortunately, their aerial skills do not protect these kites or their young from nocturnal attacks on their exposed treetop nests by Great Horned Owls, which have been recently implicated as a major kite predator. The species' U.S. distribution has shriveled considerably from its historical limits, and numbers rapidly declined from the 1880's to 1940, most likely the result of deforestation, increased agriculture development, and direct persecution, e.g., shooting. Currently, there are at most a few thousand individuals scattered across seven southeastern states and, although not officially listed as Threatened or Endangered, this spectacular bird is at serious risk of further decline.

Amazingly, Swallow-tailed Kites regularly dine on dragonflies, which are masterful aerial acrobats in their own right. The insects are

Currently, there are at most a few thousand individuals scattered across seven southeastern states and, although not officially listed as Threatened or Endangered, this spectacular bird is at serious risk of further decline.

Greg Lavaty

Greg Lavaty

deftly plucked from mid-air as if they were stationary targets, and Swallow-taileds are just as skillful at detecting and seizing incredibly well-camouflaged snakes, lizards, and large insects from tree foliage. Food items are captured with the feet and talons and then consumed in flight as the bird continues searching for its next meal.

The Swallow-tailed Kite is a medium-sized hawk approximately 19 to 26 inches from bill to tail tip, and with a wingspan of four feet. It weighs about a pound more or less (13 to 17 ounces), depending on whether a bird has "fattened-up" for migration. Males and females are essentially identical in plumage and size. The head, breast, belly, and under wing linings are gleaming white, and the back, tail, and upper wings are glossy blackish. Although the upper parts can appear to be uniformly colored, in good light there are subtly beautiful gradations from black across the upper back and forewings to dark blue gray on the rest of the wings, back, and tail. The eye is reddish brown and the legs and feet are dark gray. No other species of Louisiana raptor possesses such a dramatically two-tone dark-and-white plumage combined with a long forked tail.

Spring migrants arrive here during March and April while southbound fall migrants typically leave between August and mid-September. In Louisiana, the species breeds primarily in the vicinity of the Sabine, Atchafalaya, Mississippi, and Pearl rivers. Swallow-tailed Kites are gregarious and nest in loose colonies. The nest is placed in a tall canopy tree, such as a cottonwood, bald cypress, or pine, and some nests are reused in successive years. The nest platform is relatively large for the size of the bird. As with most raptors, Swallow-tailed Kites nest only once per season. The two eggs, which are white with dark brown splotches, are laid a few days apart, and the second egg is usually somewhat smaller/lighter. Incubation begins with the first egg and lasts just short of a month. Due to the modest differences in size and incubation between the eggs, there is usually a noticeable size difference between the two chicks, and the smaller chick may not survive if adequate food resources are not available. After hatching, it takes a little over a month before the young are capable of their first test flights. They don't permanently leave the nest site for a few to several more weeks and then still remain with the parents for some time after that prior to fall migration.

LEFT: **Food is consumed mid-air as the Swallow-tailed Kite continues searching for its next meal.**

BELOW: **Male and female Swallow-tailed Kites are essentially identical in plumage and size.**

Greg Lavaty

Mississippi Kite

(*Ictinia mississippiensis*)

OPPOSITE PAGE:
Characters possessed by the beautiful adult Mississippi Kite include a white or grayish-white head, pearly gray under parts and wing linings, and wings with silvery white secondaries and varying amounts of rufous in the primaries.

Mississippi Kites are gregarious, and often forage in large groups as well as defend their territory from potential predators—large or small. They will nest in urban and suburban areas with established large trees. Kites soar effortlessly and buoyantly, feeding primarily on insects such as dragonflies, which they catch in mid-air with their talons and then eat on the wing. These birds with a combination of pointed wings and long tail, small feet, short toes and sharp talons are well equipped to pursue and capture aerial prey.

This medium-sized raptor has a dark gray back and long notched black tail. It is approximately 13 to 15 inches in length, with a wingspan of 3 feet, and weighs 7.6 to 13.7 ounces. Characters possessed by the beautiful adult Mississippi Kite include a white or grayish-white head, pearly gray under parts and wing linings, and wings with silvery white secondaries and varying amounts of rufous in the primaries. Dark eyebrows highlight piercing red eyes.

The Mississippi Kite breeds exclusively in the United States, primarily in the southeastern and south-central states, with isolated pockets farther north, and even westward in desert riparian forest situations to New Mexico and Arizona. In Louisiana, the species is concentrated along major river drainages that still have expanses of the preferred bottomland hardwood/riparian habitats, especially the Red, Mississippi, Atchafalaya, and Pearl rivers and their tributaries. They also inhabit well-wooded sections of cities and towns.

Mississippi Kite in Juvenale plumage.

Charlie Hohorst

Mississippi Kites are classic "western circum-gulf fall migrants," first moving south towards the Gulf Coast and then west and south around the west side of the Gulf of Mexico. As with other diurnal raptors, the species migrates by day, and certain geographic features concentrate migrants into narrow corridors along the coast; one such "choke point" is near Veracruz, Mexico, where close to 200,000 Mississippi Kites are sometimes counted in a few weeks. These kites are long distance migrants, spending the winter in South America as far south as Argentina and Paraguay. In spring, the species typically returns to the Gulf Coast in mid to late April, rarely as early as mid March.

Mississippi Kites usually nest in loose aggregations of a few to several pairs. The nest, a shallow bowl of sticks, is typically located fairly high in a large tree. In these situations, nests can be susceptible to destruction from high winds during severe storms. Mississippi Kites typically lay two white eggs, which are incubated by both parents taking turns for 29 to 31 days. Both parents also feed the young. Young kites fledge about five weeks after hatching and continue to be fed by the parents for another 2 to 3 weeks after which kites will congregate at pre-migratory staging areas. Large insects, such as arboreal katydid grasshoppers, dragonflies, and cicadas are the main menu items; kites have even earned the local nickname "Locust-eater" in some areas. Kites will also prey opportunistically on a variety of small vertebrates inhabiting the forest canopy, especially small reptiles such as anoles and green snakes, as well as frogs, small birds, and even bats.

Cooper's Hawk

(Accipiter cooperi)

The Cooper's Hawk, as with other members of the genus *Accipiter*, is primarily a bird hunting specialist. Hawks of this genus are built for maneuvering through forest during short aerial pursuits of birds, or ambushes of perched birds or small mammals. The relatively slim torso, short, broad, rounded wings, long, narrow tail, and long legs, toes, and talons combine to provide power, agility, and precision. As domesticated poultry proliferated across the continent, Cooper's Hawks would fearlessly and opportunistically help themselves to these unsuspecting domestic fowl. As a result, although the hawks didn't "know any better," Cooper's in particular earned the notorious nickname of "chicken hawk".

Numbers of Cooper's Hawks observed in Louisiana during migration and winter have increased since the mid-1980s and more breeding season detections suggest more breeding pairs. Cooper's Hawks are important components to a healthy environment, weeding out less fit individuals of prey species. Although poultry is still an occasional target of the Cooper's Hawk, in more modern times the species is more likely to exploit another

The under parts and under wing linings of adult Cooper's Hawks are finely barred rusty and white, but immatures (as shown here) are quite different with distinct dark brown streaks and spots.

Greg Lavaty

new resource: birds at residential feeders. If birds in your yard suddenly utter alarm calls and dive for cover, and everything becomes eerily silent, then the birds may have spotted a Cooper's Hawk (or its smaller relative, the Sharp-shinned Hawk) on the prowl. Cooper's Hawks range in length from 15 to 20 inches, with a wingspan of 24 to 35 inches, and weigh 8.8 to 21.1 ounces. Some of the most dramatic examples of "reverse" sexual size dimorphism are found among the *Accipiter* hawks, and female Cooper's Hawks are approximately a third larger than males; there is no overlap in weight between the sexes. Adult Cooper's are dark blue-gray above (earning them the nickname "blue darter") with a contrasting slaty-black cap and barred gray-and-black, whitish-tipped tail. The under parts and under wing linings are finely barred rusty and white.

Cooper's Hawks are widely distributed across North America from southern Canada south into west-central Mexico, south Texas, and central Florida. Northernmost populations are migratory, relocating south into the central and southern United States and even as far as northern Central America. Because breeding pairs are so secretive, it is usually difficult to actually confirm nesting. However, a fair number of confirmed breeding records and increased numbers of sightings of adults throughout most of Louisiana during the late spring and summer months indicate that the species is expanding its breeding range in the state. Although Cooper's Hawks are still relatively scarce breeders in Louisiana, larger numbers pass through the state during migration or spend the winter here. This species prefers woodlands, both pine and hardwood, and has even been found nesting in batture woodland in the Mississippi River delta of lower Plaquemines Parish as well as in well-wooded suburbs of cities and towns. Southbound migrants typically start arriving in September and wintering birds and spring migrants disappear by early April.

Greg Lavaty

Adult Cooper's Hawks are dark blue-gray above (earning them the nickname "blue darter") with a contrasting slaty-black cap and barred gray-and-black, whitish-tipped tail.

Cooper's Hawks have voracious appetites and will consume the equivalent of 12% of their body weight daily. The diet consists primarily of birds, but small mammals are also taken. Cooper's Hawks pursue prey on the wing, either spotting its potential meal from a concealed perch or while cruising likely areas. Such high-speed pursuits through well-vegetated areas can be dangerous even for such an agile predator, and many Cooper's Hawks have been recovered with old injuries from prior mishaps, including healed broken bones.

Vultures

Black Vulture (*Coragyps atratus*)
Turkey Vulture (*Cathartes aura*)

Vultures are the garbage collectors of the bird world, and as the early Spaniard settlers realized, provide an important service by cleaning up dead animals. The genus name *Cathartes* means "purifier." Two species occur in the state, the Turkey Vulture and the Black Vulture. Turkey Vultures tend to prefer somewhat more open areas and are more solitary in nature, whereas Black Vultures prefer more wooded regions and are much more gregarious. But there is much overlap between the two species and they often occur in the same areas and will feed together at the same carcass.

Vultures are fairly large raptors, with a general length of 22 to 27 inches. Adults of both species are blackish or blackish-brown with a naked head and a pale colored bill. The sexes are identical in plumage, but females average slightly larger than males. Both species have long broad wings and long outer primaries (feathers of the 'hand') and broad tails, which enable them to soar effortlessly and for long periods on thermal updrafts. The shape and color pattern of the two species are different. The Turkey Vulture has proportionately longer, narrower wings, a wingspan of 5 to 6 feet, and typically soars with the wings held at a slight upward "dihedral" angle or shallow "v" shape when viewed head-on. They rarely flap their wings, and when they do, the flaps are relatively slow and deep. The head, legs, and feet are proportionately small relative to the body, and the tail is proportionately long. The plumage is overall blackish-brown, but the undersides of the flight feathers are more silvery gray creating a two-tone effect with the blackish under wing linings. Adult Turkey Vultures have bright red or purplish red heads, white bills, brown eyes, and pinkish legs and feet.

In comparison, the Black Vulture is more "squatty" in appearance, with proportionately shorter, broader wings, a wingspan of only 4 to 5 feet, proportionately larger head, legs, and feet, and proportionately shorter tail. These shape differences are fairly easy to appreciate

Greg Lavaty

The plumage of Turkey Vultures is overall blackish-brown, but the undersides of the flight feather are more silvery gray creating a two-tone effect with the blackish wing linings.

on either flying or perched individuals. In flight, the wings tend to be held straight out ("flat") or even at a slight downward angle, and this species is more likely to alternate between gliding and bursts of quick, shallow wing flaps. Not surprisingly, Black Vultures have mostly blackish plumage, but there is a distinctive patch of white in the primary feathers. Adults have gray head skin, a dark bill with a light tip, brown eyes, and blackish brown legs and feet.

Both species are widely distributed in the Americas. Turkey Vultures range from southern Canada and the United States south through much of South America. Northernmost populations are migratory. The Black Vulture also occurs throughout most of Mexico, Central America, and South America, but does not make it as far north in the United

Greg Lavaty

States, occurring only in the southeastern and mid-Atlantic states and extreme southern Arizona. Both species are common residents in Louisiana and can be seen year round.

Both species nest in a wide variety of habitats and both will use large natural cavities in trees, man-made structures such as hunting blinds or abandoned buildings, or sheltered situations on the ground, including stumps, logs, dense palmetto thickets, etc. Successful nest sites can be used year after year. There is no actual nest structure and the 1 to 3 eggs are laid from late March through April directly

Greg Lavaty

on the substrate of the nest site. Both parents incubate the eggs for 38 to 45 days. Young fledge when about three months old but stay in the company of their parents as a social group for many years.

These birds eat a wide variety of wild or domestic carrion, including everything from dead deer, cattle, or horses down to smaller items such as small rodents, reptiles, birds, fish, or even insects. Vultures use their exceptionally keen eyesight to find food either directly or indirectly by tracking the movements of other vultures. To accomplish this, vultures soar high on thermals to keep other vultures in sight. A vulture's sudden change in behavior, dropping from the sky and making low circles, signals to others that a bountiful carcass may await. Turkey Vultures also locate carrion through their keen sense of smell, which gives them a decided advantage in homing in on concealed carcasses and, not surprisingly, they are often the first species to arrive at an odoriferous food source. A tip-off to their superior olfactory prowess, Turkey Vultures have larger perforated or "see through" nostrils compared to Black Vultures. To compensate for being "olfactory challenged," Black Vultures typically soar at higher altitudes and track the movements of Turkey Vultures below them. And, when a Turkey Vulture locates a meal, Black Vultures take advantage and quickly descend to join the feast.

LEFT: **The adult Turkey Vulture has a bright red or purplish red head.**

RIGHT: **In contrast to the Turkey Vulture, the Black Vulture is "squatty" in appearance with blackish-gray head skin.**

Osprey
(Pandion haliaetus)

OPPOSITE PAGE:
Ospreys are amazingly long-winged and, with a wingspan of 5 to 6 feet, they are one of our largest birds of prey.

Ospreys catch live fish by diving head first towards the water's surface and then bring the feet and talons forward in front of the head into striking position just before hitting the water. Prey is usually snagged near the surface, but sometimes the bird is entirely submerged for a moment before resurfacing and then laboring back into the air with its slippery quarry. Ospreys are able to extricate themselves from such situations, sometimes carrying a fish weighing in excess of half the bird's weight, thanks to the incredible lift afforded by their long, powerful wings. Fish are firmly gripped by the combination of long sharp talons, powerful feet/toes, and roughly textured "anti-slip" soles.

Ospreys are amazingly long-winged and, with a wingspan of 5 to 6 feet, they are one of our largest birds of prey. The species is distinctively plumaged, blackish brown above and mostly white below with a conspicuous dark eye-stripe across the white face, and a slight crest. The thighs are covered with short, matted feathers, and the lower legs are unfeathered, further adaptations of a master fisherman.

Ospreys occur nearly worldwide, anywhere that has suitable nesting sites near water. In the United States and Canada, it is primarily a 'northern species' ranging from Alaska across Canada and south into the northwestern and Great Lakes states; the species is patchily distributed elsewhere in North America, but there are major concentrations (due to more favorable habitat) in the Chesapeake Bay region, Florida, and Baja California. Surprisingly, historically there were very few Osprey breeding records for Louisiana. But, as the species has rebounded in the United States, it has also increased dramatically as a breeding bird, especially in southeast Louisiana and along some of the larger rivers and inland reservoirs. The species becomes more common and widespread in our state in winter and during spring and fall migration.

Habitat requirements are quite varied, but good fishing sites with open shallow water and defensible elevated nest sites are prerequisites. In Louisiana, Ospreys prefer to nest in tall trees, or use artificial platforms such as channel markers or utility poles. Ospreys are monogamous and pairs reunite each spring at the previous year's nest location, reinforcing their bonds through courtship displays. The male offers a fish to the female, known as the 'fish flight,' during which the male screams while holding the fish. The male will then feed the fish to the female; this behavior continues through the breeding season until the young are fledged.

The nest is a massive platform of large sticks, with an inner lining of smaller sticks topped with flatter, softer objects such as bark and water plants - presumably so the chicks won't fall through the cracks. The same nest is used year after year and, like that of the Bald Eagle, gets increasingly larger, sometimes to the point that it collapses the supporting dead tree. Ospreys lay one to four eggs (averaging three) that are relatively richly colored for a raptor: cream-colored to pinkish and spotted with reddish brown. Incubation is primarily done by the female and begins with the first egg. Hatching occurs in about 37 days, and the down-covered chicks hatch sequentially a few days apart. The smaller chicks will be at a decided disadvantage in competing for food from the parents. Their first test flights begin at 50 to 55 days, and after becoming competent fliers they will remain with their parents for another 8-10 weeks while honing their foraging skills.

Charlie Hohorst

Sharp-shinned Hawk

(Accipiter striatus)

An otherwise lively forest filled with the calls of birds suddenly goes silent, usually a good sign that some sort of bird-eating hawk has been sensed. Then, the silence is broken by repeated strange 'acck' calls. The sounds can be traced to a flock of Blue Jays that has spotted a Sharp-shinned Hawk. And, it's quickly apparent that the jays are engaged in a dangerous game of cat-and-mouse in an attempt to drive the hawk from their territory. In most cases, the persistent jays win out, the Sharp-shinned moves off in search of less attentive prey and the other small birds in the area relax and sound the "all clear." But, sometimes, a calculating hawk can turn the table and things end poorly for a jay.

Small birds instinctively know that *Accipiter* hawks are a threat and as soon as one bird detects or even suspects the presence of one of these hawks, then the alarm spreads quickly. Birders can learn to recognize this alarm behavior and use it to spot an *Accipiter*.

Sharp-shinned Hawks are very similar to the Cooper's Hawk, it's larger cousin, and the relatively large female Sharp-shinned is almost the same size as the relatively small male Cooper's. Female Sharp-shinneds range in length from 11 to 13 inches, with a wingspan of 23 to 27 inches, and weigh from 5 to 8 ounces. Males are appreciably smaller, 9 to 11 inches long, with a wingspan of 20 to 22 inches, and weighing 3 to 4 ounces. In adult plumage this species has a blue-gray back (hence the nickname "blue darter"), a blue-gray tail with black bands, and the whitish under parts are heavily barred with reddish. In comparison to the Cooper's Hawk, the head has less of a black "capped" look, the tail has a more squared-off tip even when spread while soaring, and the legs are long and more slender with a proportionately longer middle toe (perhaps an adaptation to grab small birds in flight). The lower leg is laterally compressed (forming a ridge along the leading edge), hence the name "sharp-shinned."

Sharp-shinned Hawks breed in boreal forests from Alaska and Canada, then south, mainly in higher elevation forests of major mountain ranges, into Mexico, Central

Greg Lavaty

Because of their small size, Sharp-shinneds are easy to pass off as a dove, woodpecker, or other bird.

Charlie Hohorst

Hunting Sharp-shinned Hawks usually survey for prospective prey from a perch then use available cover for a stealthy approach.

America, and South America. The species winters from southeastern Alaska and extreme southwestern and southeastern Canada south. In Louisiana, Sharp-shinned is a common migrant and wintering species. However, there are two recent confirmed nesting records and a few other sightings that are suggestive of breeding from mature pine forests in north-central and west-central Louisiana.

When soaring overhead, this species has a typical *Accipiter* profile with relatively short, rounded wings and long narrow tail. But, because of their small size, Sharp-shinneds are easy to pass off as a dove, woodpecker, or other bird as they flit from one perch to another in a forest situation. Something to watch for is that perched Sharpies will periodically wag their tails back and forth. Hunting Sharp-shinned Hawks usually survey for prospective prey from a perch then use available cover for a stealthy approach. Perched or flying birds are taken during short, high speed pursuits and captured with the long legs and taloned feet.

In fall, Sharp-shinneds migrating along the coast will zigzag through coastal cheniers looking for an opportunistic snack. The diet consists almost entirely of small birds, but small mammals and, possibly, insects are also eaten occasionally.

Broad-winged Hawk

(Buteo platypterus)

LEFT: The Broad-winged Hawk is a medium-sized raptor. Its upper parts, head, and chest are dark brown, and the under parts are barred with chestnut on a white background.

RIGHT: Broad-winged Hawks can often be seen "kettling"- large flocks circling on thermal updrafts.

The first strong fall cold front in late September or early October brings the passage of thousands of Broad-winged Hawks from the north, often seen "kettling"- large flocks circling on thermal updrafts - as if taking a break during the long flight. Broad-wingeds summer in North America, but spend the winter months in humid tropical forests of Central and South America. In fact, it is one of only five North American raptors considered a "complete" migrant- all birds vacate the breeding range during the winter, and there is no overlap between the breeding and wintering ranges. In fall, most of the North American breeders and the young of the year gradually concentrate towards the Gulf Coast. Reluctant to fly long distances over water because of the lack of updrafts, they move westward around the west side of the Gulf of Mexico.

Greg Lavaty

In Louisiana, processions of large flocks, sometimes numbering into the thousands of individuals per day, can be seen moving south or west from vantage points along the Mississippi River or along the coast of Cameron Parish. Near sunset on heavy migration days on the coast, flocks that are still moving west begin to filter down into patches of coastal

Greg Lavaty

woods to spend the night. In the morning, as soon as the winds or thermals get going, then so do the hawks, rising up, reforming flocks, and resuming their westward journey.

The Broad-winged Hawk is a medium-sized raptor with a length ranging from 13 to 17 inches, a wingspan 32 to 36 inches, and weighing 11 to 17 ounces. Females are slightly larger than males. This is our smallest member of the genus *Buteo*, which includes the relatively chunky bodied, broad-winged, broad-tailed "soaring" hawks. It has a somewhat more pointed wing compared to our other two regularly occurring *Buteo* species, the Red-tailed Hawk and the Red-shouldered Hawk, which can help in identifying this species by its flight profile. The upper parts, head, and chest are dark brown, and the under parts are barred with chestnut on a white background. The black tail has one conspicu-

Greg Lavaty

The Broad-winged Hawk has a somewhat more pointed wing compared to our other two regularly occurring *Buteo* species, the Red-tailed Hawk and the Red-shouldered Hawk, which can help in identifying this species by its flight profile.

ous white band plus a narrower one nearer the base of the tail.

The Broad-winged Hawk is primarily a bird of the eastern United States, breeding from southern Canada to the Gulf Coast. In Louisiana, it nests north of the coastal zone in hardwood and mixed hardwood-pine forests. In spring, migrants and Louisiana breeders can arrive beginning in mid-March, and northbound migrants continue to filter through Louisiana through April. Southbound migrants move as early as September and most Broad-winged Hawks have vacated Louisiana and the rest of the United States by late October. A few birds may winter each year in woodlots of the lower Mississippi delta.

As is typical of many diurnal raptors, pairs engage in elaborate aerial courtship displays, including "high-circling" accompanied by much vocalization, "sky-dancing" which involves spiraling upward out of sight and then an equally elaborate descent, and "tumbling"- a death defying dive and last minute "pull-out." Pairs raise a single brood per season. The 1 to 3 eggs are incubated 28 to 31 days and the young hawks leave the nest about one month later. They remain in the care of their parents for another three weeks or more.

Preferred prey includes large insects (grasshoppers, katydids, cicadas), arboreal reptiles (anole lizards and small snakes such as green snakes), frogs, small birds (mainly nestlings and fledglings), and small mammals. Once a potential meal is spotted, the hawk launches towards it, catching it in its talons and then returning to a perch to consume its meal.

Peregrine Falcon

(Falco peregrinus)

Formerly known as the "Duck Hawk" in North America, and simply called "Peregrine" in the Old World, Peregrine Falcons are once again a fairly regular sight in Louisiana during migration and the winter months. But, not so long ago, North American Peregrines were teetering on the verge of oblivion. Fairly soon after the pesticide DDT was put into use in the early 1940s breeding populations plummeted and the species completely disappeared from some areas. By 1998, after the banning of DDT and implementation of strict protective measures, most Peregrine populations had recovered significantly, prompting removal from the Endangered and Threatened lists.

Peregrines hunt on the wing, not from a stationary perch, relying on speed to overtake their quarry. Probably the most famous hunting strategy is the "stoop." A stoop is preceded by selection of a potential target, followed by a climb to get well above the intended prey. Although stoops can vary greatly, the most spectacular ones begin with the falcon banking suddenly at the right moment and then diving with closed wings like an accelerating missile. Depending on starting altitude and angle of decent, stoops can cover a distance of half a mile or more and reach speeds up to 100 miles per hour. In the most dramatic captures, a flying bird is killed or stunned in mid air by being clobbered with fisted feet at high speed, and then the prey is retrieved during a second pass before it hits the ground! In other cases, flying birds or bats are simply grabbed with the talons, or prey is taken from the ground or water surface.

Peregrines are medium-sized raptors, approximately 14 to 18 inches in length, with a wingspan of 37 to 46 inches, and weighing from 16 to 33 ounces. A Peregrine is immediately recognizable by its shape—typical of a falcon: a slender but sturdy form, long pointed wings and tail. Males and females are essentially identical in appearance. In general, adults are distinguished by their blackish head and prominent black "blaze" down the cheek, and blue-gray upper parts spotted or barred with black on the upper wings, back, rump, and tail. The under parts are whitish or buffy with dark bands, especially prominent across the chest, flanks, and under tail coverts.

The Peregrine Falcon has a nearly worldwide distribution, occurring almost everywhere except Antarctica and a few oceanic islands. Many of the populations are migratory

Greg Lavaty

Adults are distinguished by their blackish head and prominent black "blaze" down the cheek, and blue-gray upper parts spotted or barred with black on the upper wings, back, rump, and tail.

Greg Lavaty

Formerly called the Duck Hawk, the Peregrine Falcon is the largest falcon occurring in Louisiana. Immatures, as depicted here, are browner on the upper parts, have a less distinctive head pattern, and are more heavily streaked below than adults.

and Peregrines occur in Louisiana principally as migrants or winter residents. There is only one breeding record for Louisiana- 11 May 1942, a pair nesting near Tallulah in a dead tree, found by none other than Roger Tory Peterson! The historical range of the Peregrine is poorly known and, perhaps prior to deforestation of the Mississippi Valley, this species may have been a regular nesting species.

In Louisiana, look for Peregrine Falcons from mid-September through April. Migrants can turn up almost anywhere, but most migrants and wintering individuals are found in the coastal and southwestern prairie regions where their preferred prey species are in greatest abundance.

Peregrine Falcons prey mostly on birds, especially shorebirds, ducks, pigeons, doves, and blackbirds. During migration, Peregrines will take up temporary residence on Gulf of Mexico oil platforms, where they ambush hapless migrants such as cuckoos, songbirds, etc.

Northern Harrier

(Circus cyaneus)

Northern Harriers are a familiar sight cruising low across a Louisiana winterscape of marsh or rice field. Harriers, although relatively common and widespread here on the wintering grounds, are generally wary birds and are almost always on the move, seen in flight and at a distance. Hence, to a certain extent they are overlooked, unappreciated, or taken for granted simply because they are so difficult to study "up close and personal." Formerly called the "Marsh Hawk" in North America, which captured the essence of the species, the name was eventually changed to conform to Old World terminology for this worldwide genus of hawks.

Female Harriers can be distinguished from males by their rusty brown color and contrasting white rump. Males *(photo opposite page)* are pearly gray above and whitish below, with a white rump, black-banded gray tail, and black tipped wings.

Greg Lavaty

The Northern Harrier is a medium-sized raptor, slim, long-winged and long-tailed. Its shape differs from the broader-winged and shorter-tailed *Buteo* hawks and the shorter, more rounded wings of *Accipiters*. There is pronounced sexual size dimorphism, with the female averaging 12% larger in size and 50% heavier than males. Males are approximately 16 to 18 inches in length, with a wingspan of 38 to 43 inches, and weighing 10 to 14 ounces while females are 18 to 29 inches long, have wingspans of 43 to 48 inches, and weigh 14 to 21 ounces. Plumage is also strikingly dimorphic between males and females. Males are pearly gray above and whitish below, with a white rump, black-banded gray tail, and black tipped primaries. The female is rusty brown, darker above and paler below and also has the contrasting white rump.

The Northern Harrier has a very large distribution in North America, breeding across most of Alaska and Canada south into much of the interior western United States, the upper Great Plains, Great Lakes region, and northeastern United States to Virginia. The species also breeds locally on the Pacific slope and in the central United States to southern Texas. In Louisiana, Northern Harriers are common during migration and in winter, typically arriving in late August and departing by the end of April.

There is no site fidelity to either its natal breeding grounds or where an individual has previously wintered, even though adult females maintain winter territories. Birds essentially wander until they locate areas with a reliable supply of prey. An amazing behavior of this species is the occasional formation of communal winter roosts. When roosts do form, harriers from a wide area will travel fairly long distances from their feeding areas to the central roost area, and then disperse again in the morning. Birds begin to congregate in the late afternoon and early evening, and then as sun sets, one by one they drop onto the ground in openings among dense grass or reeds.

Harriers hunt on the wing, typically coursing fairly low, back and forth over fields or marsh. Gliding or soaring birds hold their wings in a dihedral angle or a shallow "V." The buoyant tilting flight is very different from other raptors.

Greg Lavaty

American Kestrel

(Falco sparverius)

The American Kestrel is our smallest raptor, averaging only slightly smaller than the male Sharp-shinned Hawk. Kestrels range from 8 to 10 inches in length, have a wingspan of 20 to 22 inches, and weigh only 4 to 5 ounces. This is also arguably our most beautiful and colorful bird of prey. It has long narrow wings, a reddish brown back and long rusty tail, blue-gray cap, and two black marks down the side of the face, one in front, the other in back of the eye. The female is slightly larger than the male but somewhat less colorful. Additionally, the male has a buffy chest, the otherwise whitish under parts are delicately spotted with black, and the bluish crown has a rusty central patch. The female is whitish below and streaked with brown.

The species' traditional American English name "Sparrow Hawk" would seem to imply that it was a hawk rather than a falcon, and that it specialized on catching small birds. This, however, was a "double misnomer" because the species is actually a true falcon, and because insects, not birds, are the diet mainstay.

American Kestrels are broadly distributed across North America from southern Alaska and Canada south throughout most of the United States. The species also occurs through the West Indies and from Mexico south to Argentina. Northernmost breed-

Greg Lavaty

American Kestrels often forage by hovering, unlike our other falcons. They use their acute vision to detect their favorite prey: mice, lizards, and large insects. Occasionally, small birds are taken, usually out of desperation.

ing populations are migratory and winter as far south as Panama. In Louisiana, kestrels are an uncommon breeder, primarily found in the pinewoods regions of the state. But, the occasional pair has been found nesting in other areas, including major cities, where they presumably nest in artificial cavities on bridges or buildings. During winter, kestrel numbers increase dramatically as northern birds begin filtering into the state in late August and early September. These birds typically head north by April of the following year.

Kestrels are cavity nesters and, in Louisiana, mainly use cavities excavated by woodpeckers, especially Northern Flickers and Red-cockaded Woodpeckers. Other natural or artificial cavities are also used. It has been suggested that a decline in breeding kestrels in Louisiana is associated with the declines of Longleaf Pine forests and Red-cockaded Woodpeckers (which are Longleaf Pine specialists). Typically, 4 to 5 brown-splotched whitish eggs are laid on the floor of the unimproved cavity during April. Some early nesting pairs get enough of a head start that they may attempt to raise two successive broods in a season, or can at least make a second attempt if the first attempt fails. Incubation lasts about a month and it takes another month or so for the young to fledge from the nest cavity.

Greg Lavaty

The male American Kestrel is our smallest and most colorful raptor. This cavity nester, formerly called the Sparrow Hawk, is actually a member of the falcon family. Kestrels breed sparingly in the pinewoods regions of the state, but are much more common and widespread during migration and winter.

Hungry kestrels primarily employ a 'wait and watch' strategy from a conspicuous perch on a utility pole, wire, or an exposed tree snag. From its perch it scans for movement in the grass or weeds below, then darts to the ground to grab its quarry with its feet and needle sharp talons. Kestrels forage in open areas and are a common sight along roads and wooded edges of fields. Preferred prey in Louisiana is large insects (grasshoppers, cicadas, katydids), reptiles (anoles, small snakes), and the occasional small bird or mammal.

Merlin

(Falco columbarius)

The Merlin's former American English name "Pigeon Hawk," referred to its resemblance in size and shape to a pigeon, especially in flight, and not to its preferred prey. The current name conforms to the Old World name, which is derived from the Old French name "esmerillon". The Merlin is a relatively small falcon, about ten inches in length, with a wingspan of about two feet and weighing 5 to 6 ounces. Males and females are virtually identical in size. Although closer in size to the other small falcon, the American Kestrel, it is superficially more similar to its larger cousin, the Peregrine Falcon, in terms of shape and coloration. This is particularly the case in flight—Merlins share the somewhat broader wings and shorter tail of the Peregrine versus the proportionately longer wings and tail of kestrels. In addition to size differences, the Merlin lacks the Peregrine's prominent black facial marks, these being only weakly defined or absent. The male is bluish-slate above; the female is browner. The whitish under parts of both sexes are streaked (and barred on flanks) with dark brown. Distinctive white bands on an otherwise dark tail, provides a good field mark separating Merlin from both Peregrine and American Kestrel.

Merlins occur across the Northern Hemisphere, breeding in the northernmost conifer-

Merlins are birds of open fields, marsh edge, and beaches, where their favorite targets are flocks of shorebirds or blackbirds. Be on the lookout for Merlins, Peregrine Falcons, or Northern Harriers whenever you see "panicking" flocks of birds.

Greg Lavaty

Greg Lavaty

Formerly known as the Pigeon Hawk, the Merlin is another member of the falcon family and its preferred prey includes large insects (depicted here) and small birds. Merlins are strictly a migratory and wintering species in Louisiana.

ous forests and mainly wintering in mid-latitude regions or, sometimes, even farther south. There are three North American subspecies, which are essentially dark, intermediate, and pale versions. The intermediate "Taiga Merlin" (*F. c. columbarius*) is the most widespread subspecies, and is the one most commonly seen migrating through or overwintering here in Louisiana.

In Louisiana, the Merlin is decidedly uncommon, and is never found in the same densities as American Kestrel or Red-tailed Hawk. Highest counts occur during fall and spring migration with smaller numbers remaining through the winter. The best chance for encountering Merlins is on or near the coast because it is a traditional east-west raptor migration corridor, and food resources and preferred open habitats are relatively plentiful. However, the southwestern rice-growing region can also be productive in winter. The first fall migrants appear in Louisiana during September, and northbound spring migrants and wintering birds have usually departed the state by mid-late April.

Merlins employ two main foraging strategies. One is the 'wait and watch,' approach, but Merlins often choose a relatively concealed perch for their vigil. The other is to course across the landscape or soar at higher altitudes to startle and "jump" a bird. Regardless, the terror-stricken prey (usually small birds, occasionally large insects) is nearly always taken on the wing. In Louisiana, the menu often includes blackbirds and small shorebirds.

Prior to the mid 1970's there were very few records of the White-tailed Kite in Louisiana. But, the species has become fairly regular in small numbers, especially in the extreme southwest, and there are now at least seven breeding records scattered across the state.

Greg Lavaty

White-tailed Kite

(Elanus leucurus)

After Louisiana's first White-tailed Kite was collected near Kenner in 1890, the better part of a century passed before the next visit. But, in the last three decades this species has become a more regular Louisiana visitor, coinciding with population increases and range expansion in adjacent southeastern Texas. Most Louisiana records are from the southwestern parishes in late fall and winter, with numbers fluctuating year-to-year from a few individuals up to dozens. Although the vast majority of wintering birds disappear during the breeding season, presumably withdrawing back into Texas and northeastern Mexico, there are a few records of nesting pairs. This relatively small falcon-shaped raptor, with a wingspread of approximately 3 feet, is very distinctive in appearance, with white head, under parts, and tail, and silvery gray upper parts contrasting with a conspicuous black shoulder patch, black eyebrow, and bright red eyes. In contrast to our other two kite species, which are primarily aerial foragers in forested regions, the White-tailed Kite is an open grassland bird specializing on small ground-inhabiting rodents. They forage from a conspicuous perch in open habitat, or, more actively, hover like a kestrel on flapping wings above potential prey. When prey is spotted, usually a mouse or large insect, the kite descends with wings held in a "V" and feet extended to grab its prey. In winter, White-tailed Kites may congregate at evening roosts, sometimes in association with roosts of Northern Harriers.

Swainson's Hawk

(Buteo swainsoni)

Up to the 1970's, the Swainson's Hawk was a genuine vagrant in Louisiana, with only a few total records from fall, winter, and spring combined. But, in the ensuing 20 or so years, the species has gradually become more regular and is now expected in small numbers, even during the breeding season. Currently it is an uncommon migrant, primarily in the southwestern parishes. But, especially in fall, it is reported with increasing frequency from other areas of the state, and even small migrant flocks have been seen at Grand Isle and in lower Plaquemines Parish. A few (usually immatures) are now reported most winters, which is of special interest because Swainson's Hawk is a long distance migrant and the traditional wintering grounds are in Argentina. Our winter records mainly come from the southwestern rice-growing region and the lower Mississippi delta. Although direct evidence of breeding is still scanty (signs of nest building, recently fledged juveniles), there is a growing body of circumstantial data (territorial pairs present through the summer) that a small but increasing breeding population exists in Calcasieu, Jefferson Davis, Acadia, and perhaps other, southwestern parishes. In this area, nests would be located in treetops in isolated woodlots and along hedgerows and forested borders of bayous.

Swainson's Hawk is a large but relatively slender and handsomely plumaged *Buteo,* mainly subsisting on small mammals and reptiles taken in open grassy/weedy fields. It spends a good deal of its life airborne, soaring on long narrow wings held at an upward angle, more reminiscent of a Turkey Vulture than a Red-tailed Hawk. Closer study reveals mostly pale under parts and fairly uniform brownish gray upperparts with contrasting whitish rump patch, dark brown chest, and white forehead. One of the best field marks is the whitish under wing linings which contrast with the darker flight feathers. The brownish tail has narrow dark bands with a broader sub-terminal band. Swainson's Hawks hunt from atop prominent high perches such as telephone poles like Red-tailed Hawks, but will also hunt from the ground. Swainson's Hawk prey is predominately insects and small rodents.

Greg Lavaty

Formerly a scarce migrant in Louisiana, the Swainson's Hawk is another species that has expanded its breeding distribution in recent decades, exploiting an open niche in the southwestern prairie region.

Crested Caracara

(Caracara cheriway)

The Crested Caracara inhabits arid and semi-arid regions from the extreme southern United States south to northern South America and Cuba. In the United States, there are three separate populations: south-central Arizona, southeast Texas and extreme southwest Louisiana, and central Florida. Historically, the small Louisiana breeding population in the Gum Cove area of extreme western Calcasieu and Cameron parishes was quite isolated from the southern Texas population. But, as the species has gradually expanded eastward in Texas, there has been a corresponding population and range expansion in southwestern Louisiana during the past 20 years, with the species now regularly sighted east to southwestern Jefferson Davis Parish, and occasionally even as far east as Vermilion and Iberia parishes. Although the species is doing well in Louisiana, it is still relatively rare and poorly studied with a speculated breeding population estimated around 25 pairs. And, it is unclear whether these increases are the result of better local productivity or Texas birds moving east into Louisiana. In Louisiana, the species prefers open areas with a mosaic of grazed and ungrazed grassland, cultivated and fallow farmland, and scattered trees, hedgerows, and woodlots. Crested Caracaras will build a large stick nest in almost any size tree. Eggs usually number 2 to 3 and are white with dark blotches.

Although quite different-looking from the typical falcons, caracaras are considered members of the family Falconidae. In appearance, caracaras are very distinctive birds and not likely to be confused with any other bird of prey. In flight, prominent white patches at the base of the primaries and a mostly white tail with a black terminal band are visible from a long distance. The broad rounded wings are also quite different from our other raptor species. Up close, the prominent bare orange skin of the cere and face contrast with the pale gray bill and black crest. Although the overall size and four foot wing span are not particularly impressive, the caracara's overall peculiar appearance, crested look, and more southerly distribution have earned it the nickname "Mexican Eagle." The upperparts and the belly are blackish brown, the throat and upper breast white, and the chest is white barred with black. Caracaras often forage in pairs or small groups, feeding opportunistically on snakes, rodents, large insects, and carrion. Unlike other hawks and falcons, but more like vultures, prey are captured and killed with the bill, not with the feet and talons. Caracaras are also quite at home on the ground.

Greg Lavaty

Crested Caracaras are "atypical" members of the falcon family. They are more hawk-like in general shape and appearance, and their extensively bare face, opportunistic feeding habitats, and carrion-dominated diet are more suggestive of the vultures.

Vagrants:

Vagrants are those species whose normal geographic distribution does not include Louisiana; their appearance in Louisiana is very unusual and most of the species in this category have been confirmed in the state fewer than ten times. They are not rare in the sense of being on the federal Endangered or Threatened list as most are common within the normal part of their range.

Northern Goshawk

(Accipiter gentilis)

Occurring worldwide in the northern hemisphere, this largest of the Accipiter hawks breeds in the western North American mountains south to central Mexico. In the East, however, it does not breed south of Pennsylvania and Maryland, and only rarely strays in winter to the southeast United States. Only once has it been confirmed in Louisiana, when two were found in Tangipahoa Parish on 30 November 1972. The winter of 1972-1973 was a Northern Goshawk "flight year," during which food shortages force numbers of individuals much farther south than normal. In fact, one of the Louisiana individuals had been banded a few months earlier in Minnesota. Adult goshawks are whitish below with fine gray barring and puffy bright white under tail coverts, and generally blue-gray above with a white eyebrow contrasting with the black cap and eye stripe.

Greg Lavaty

Harris Hawk

Harris's Hawk

(Parabuteo unicinctus)

The Harris's Hawk is patchily distributed in relatively arid regions from the extreme southwestern United States to southern South America. It has been slowly spreading in Texas, making it a good candidate for wandering to Louisiana, but is also popular with falconers because it is fairly easily bred in captivity and because of its interesting group-hunting behavior. Therefore, although a number of Harris's have been found in Louisiana in recent years, it is almost impossible to be certain if they are wild or escaped captives

because many birds used in falconry are not outfitted with bands or jesses. Nevertheless, at least three records from southwestern Louisiana are considered real vagrants because they were found in the "expected" part of the state, did not show signs of captivity, and two coincided with a broader northward invasion by the species during the winter of 1994-1995. Identification of this medium-sized hawk is relatively straightforward based on the overall blackish brown plumage, reddish shoulders and thighs, white under tail coverts, and white base and tip to the otherwise black tail. Interestingly, this species was originally described by John James Audubon based on a specimen reportedly taken somewhere between Bayou Sara, Louisiana and Natchez, Mississippi.

Greg Lavaty

White-tailed Hawk.

White-tailed Hawk

(Buteo albicaudatus)

The White-tailed Hawk is a widespread tropical species that normally occurs as far north as south-central Texas. In Louisiana, there are only about half a dozen late fall-winter records from the southwestern parishes, including one adult that spent several consecutive winters from 1995-2001 in Jefferson Davis Parish. The species is gradually increasing and spreading in Texas, so it is likely that this hawk will occur in Louisiana more frequently in the future. The beautifully plumaged adult is white below and mostly gray above with a rust-colored shoulder patch, blackish flight feathers on the relatively long wings, and a short white tail with a black subterminal band.

Zone-tailed Hawk

(Buteo albonotatus)

This is another tropical American species with a limited U.S. distribution in the southwestern states. There is only one record for this species in Louisiana - an injured bird in St. Bernard Parish in December 1984. Zone-taileds are uniformly grayish black with white tail bands, and yellow cere, legs, and feet. The species typically hunts by soaring at relatively high altitudes, where it superficially resembles a Turkey Vulture in coloration, shape, and flight behavior.

Ferruginous Hawk

(Buteo regalis)

This northern species has been documented in southwestern Louisiana about a half dozen times during late fall, winter, and early spring. There are many other Louisiana reports of Ferruginous Hawks from over the years, but most lack convincing details and undoubtedly are misidentifications of the superficially similar "Krider's" Red-tailed Hawk. The Ferruginous is a large, open country *Buteo*. The bill of this bird is relatively large and the corner of the mouth extends farther back on the face than other hawks. The legs are feathered to the feet (hence the old name of "Ferruginous Rough-legged Hawk"), and the wings are proportionately long and broad. The adult light morph is overall very pale with a pale head, whitish tail tinged with rusty or

gray, white bases to the primaries, and contrasting reddish back and shoulders and dark thighs. The dark morph is very rare. Like the Rough-legged, this is another open country hawk that will often forage by hovering and will frequently perch on the ground.

Rough-legged Hawk

(Buteo lagopus)

This northern species has been reported in Louisiana many times, and should turn up here occasionally in winter, but very few records are supported by adequate documentation, and notably photographs. The Louisiana Bird Records Committee currently accepts about half a dozen other sight records that were accompanied by convincing descriptions. To complicate matters, however, a recent specimen closely resembling this species and initially identified as such was subsequently re-identified as a hybrid between Rough-legged Hawk and Swainson's Hawk. Most Rough-legged reports probably pertain to superficially similar looking plumages of the Red-tailed Hawk. Rough-legged Hawks can be identified (with caution) by the combination of: small bill; long, narrow wings with a large blackish "wrist patch" on the under side and pale primary bases on the upper side; whitish tail with a thick dark terminal band; pale head and dark belly patch; and fully feathered ("Rough") legs (difficult to see at a distance). This species is an open country rodent specialist that will frequently forage by hovering, and prefers to sit on low perches or on the ground.

Greg Lavaty

Ferruginous Hawk

Golden Eagle

(Aquila chrysaetos)

Golden Eagles are very rare fall migrants and winter visitors in Louisiana, with records from October-March. It is a large and fairly distinctive species, but identification can still be challenging; inexperienced observers can confuse it with the smaller but superficially similar (especially at a distance or under poor viewing conditions) Turkey Vulture, dark morph Red-tailed Hawk, or immature Bald Eagle. Golden Eagles are somewhat smaller and slimmer than Bald Eagles, with proportionately narrower wings, longer tail, smaller head and bill, and brown eyes; the legs are also proportionately smaller than Bald Eagle, and the legs are completely feathered, in contrast to the Bald Eagle's bare legs. It is generally a bird of open country and, in the West, specializes on relatively large mammal prey such as jackrabbits. Birds that end up wintering in Louisiana often settle into areas with large concentrations of geese and ducks and, presumably, subsist on waterfowl, especially individuals crippled by hunters. Fall records usually involve migrants seen on or near the southwestern Louisiana coast during major flights of other raptors.

Louisiana's Birds of Prey, What Can You Do To Help

Here in Louisiana, winter is surely the time of abundance when considering birds of prey. Southbound migrants from northern climates pour across many of Louisiana's habitats in winter mixing with birds that are year-round residents. Anyone traveling across the state at that time will almost certainly witness many Red-tailed Hawks perched high atop telephone poles, searching for their next meal. Traveling through Louisiana swamps, particularly the Atchafalaya Basin, will allow for the likely sighting of Bald Eagles as they become a more and more common sight because of increasing populations. And travelers along the coast could see any of a number of raptors including Peregrine Falcons chasing birds along the beach or Northern Harriers gliding low across the marsh surface in search of prey. For raptors, this is a time of plenty where they fatten up in preparation for spring migration and the upcoming breeding season.

As the seasons progress and spring approaches some birds begin their northern journeys and leave the state, but others - who are also traveling northward from Central and South America - begin arriving here. Many of these Neotropical migrants, as they are called, will continue their northern journeys throughout the spring but some will stay behind to raise young.

Raptor migration patterns in Louisiana are fairly well documented as is the role of raptors in the food chain. But for a state that supports large numbers of raptors, our efforts at understanding their breeding biology, productivity, abundance, and impacts of human disturbance are paltry at best. Few studies based in Louisiana exist and of those that do focus largely on Bald Eagles and to some extent on Swallow-tailed Kites. Although Christmas bird counts in winter and breeding bird surveys in early summer offer us a snapshot on abundance little else is known about Louisiana's diurnal raptors.

Remember, it wasn't long ago that many of these birds were "killed for no other reason than being a hawk." As perceptions change and we begin to appreciate their role in nature, we might begin to address important questions and fill the information gaps. Understanding the life history of these birds would be critical in preserving their existence.

What Can You Do?

Educate yourself! Become aware of the efforts of conservation organizations that help protect and manage Louisiana's wild habitats and the birds of prey that rely on them.

Barataria-Terrebonne National Estuary Program **www.btnep.org 1-800-259-0869**

Louisiana Ornithological Society **www.losbird.org**

Louisiana Bird Resource Center **www.lsu.edu/birdcenter**

Louisiana Department of Wildlife and Fisheries **http://www.wlf.state.la.us**

The Louisiana Nature Conservancy **www.nature.org/Louisiana 1-225-338-1040**

Louisiana Wildlife Federation **www.lawildlife.org**

Gulf Coast Bird Observatory **www.gcbo.org 1-979-480-0999**

U.S. Fish and Wildlife Service **www.fws.gov/birds**

• It is illegal to harass or kill any species of diurnal raptor. Report violations to the appropriate agencies.

• Louisiana Department of Wildlife and Fisheries **1-800-442-2511**

• U. S. Fish and Wildlife Service **1-337-291-3114**

Become a volunteer and help with coastal restoration. The Barataria-Terrebonne National Estuary Program maintains a volunteer program and is always looking for new members. Call us at **1-800-259-0869** or visit the web site **http://volunteer.btnep.org/.**