

Maine Breeding Bird Atlas

Atlasing Secretive Marshbirds in Your Block

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A Project of the Maine Department of Inland Fisheries and Wildlife



Maine is a state with abundant and diverse wetland areas. Marshes, swamps, fens, and bogs can be found across the state. This diverse array of wetland habitat hosts an equally diverse cast of bird species each breeding season. Populations of many marsh birds that are dependent on emergent wetlands appear to be declining in the region, but these species can be difficult to detect. As an atlas volunteer, you will likely spend some time exploring a wide variety of habitats, including wetlands. Detecting Maine's secretive marshbirds and other wetland species requires a little extra time and effort, however.

With their dense emergent vegetation and often impassable topography, wetlands make for a challenging habitat to survey for bird species. This is especially true when it comes to Maine's most secretive wetland species, many of whom are well camouflaged and remain hidden within the cover of vegetation. Fortunately, many wetland-associated species can be identified by their songs, calls, and other sounds. This is true of the nine focal species of this effort - Pied-billed Grebe, American Bittern, Least Bittern, Green Heron, Sora, Virginia Rail, Common Gallinule, American Coot, and Sedge Wren.

Do not be discouraged if you do not see or hear any of the focal species during your survey efforts. The data you collect is still extremely valuable. It is just as important to document where birds are as it is to document where birds are not - so all surveys are very helpful, even if you don't find any crepuscular or nocturnal species.

When to survey:

Marshbird surveys should be conducted between May 15th and June 30th. The best time of day to survey for these secretive species is in the early morning from 30 minutes before sunrise until 3 hours after sunrise. Early evening surveys are also a good time to listen for these species, although you need to make sure that you have enough light (or a really good flashlight) to get back to your vehicle.

What to listen for:

Birds you could encounter during these surveys will depend on both your region and the wetland type, but you could observe a host of species including Black Tern, Great Blue Heron, Snowy Egret, Sandhill Crane, Marsh Wren, Common Yellowthroat, Swamp Sparrow, Red-winged Blackbird, and many others. While we are interested in recording the breeding evidence of all wetland bird species, it is important to remember that the primary focus of these marshbird surveys are to detect nesting Pied-billed Grebe, American Bittern, Least Bittern, Green Heron, Sora, Virginia Rail, Common Gallinule, American Coot, and Sedge Wren.

Because wetland species are often difficult to observe, songs and calls will often be the best indicator of the breeding status for some of these more secretive species. Become familiar with as many wetland bird species songs and calls so that you can identify species by ear, but particularly the 9 focus species noted above. Dendroica (<https://www.natureinstruct.org/dendroica/>) is great resource where you can look up any species and hear a variety of the sounds that they make.

Birds singing or calling in appropriate breeding habitat can be used as a possible indicator of breeding in an Atlas block. For example, if you don't see a Pied-billed Grebe, but can hear one giving its greeting rattle call from within emergent vegetation, this can be coded as "in appropriate habitat" (code **H**). Songs can also be used as possible and probable indicators of breeding in an Atlas block. For example, if you encounter a singing Sedge Wren in a coastal marsh, this would be coded as a "singing bird" in appropriate habitat (code **S**). If you were to hear a singing Sedge



Wren in the same location within the Atlas block 7 or more days later, this would be a probable indicator of breeding (code **S7**). Some vocalizations – such as the American Bittern’s “chu-peep” call performed by male bitterns during copulation provide an even higher degree of certainty that the species is breeding in the habitat (code **C**). Examples of the breeding behaviors for each species you are likely to encounter during these surveys are given at the end of this document.

A note on frog vocalizations: It may also be useful to become familiar with the vocalizations of the handful of frog species which inhabit these wetland areas so as not to confuse them with any vocalizing bird species. These include the Spring Peeper, Wood Frog, Northern Leopard Frog, Pickerel Frog, American Toad, Gray Treefrog, Green Frog, American Bullfrog, and Mink Frog. Examples of these calls can be found at <https://musicofnature.com/calls-of-frogs-and-toads-of-the-northeast/>.

Broadcasting of bird calls:

The use of playback can have a disruptive effect on nesting birds if used improperly. Playing recorded vocalizations can cause birds to expend energy, become stressed, and become distracted from their usual activities (foraging, nest building, care of young, etc.). It is for these reasons that we ask that volunteers **strictly adhere to the project protocol** outlined in this document. We ask that you please **do not** use playback to stimulate birds to vocalize and instead rely on detecting birds that are naturally visible and/or vocalizing. These secretive marsh birds do not typically vocalize regularly, so it is necessary to make a few trips to the same wetland every other week to listen for these species. The atlas will have a small number of trained technicians working on selected wetlands and playback will be used sparingly for that effort.

How to survey:

How you access wetland areas will depend on the wetlands themselves. Some wetlands may be accessible along a road or trail. Others may be better reached using a canoe or kayak. When doing the latter, be sure to carry all the necessary watercraft safety equipment. Be mindful not to enter private property without prior permission and make sure that you are visible when near the road. Carry a headlamp and a reflective vest if out early in the morning or late at night. Be sure to let someone know your plans and do not wander into any areas you are unfamiliar with.

There are two levels of participation for volunteers to collect breeding observations of wetland birds based upon your level of availability and interest:

Option 1: Have a wetland on or near your property? Conduct your observations there! You can look and listen for waterfowl, rails, herons, and other wetland species. Ideally you would spend at least 10 minutes listening for birds during the morning or evening and repeat your surveys every 2 weeks (1 survey each between May 15-31; June 1-14; and June 15-25). However, how long you spend looking and listening for these fascinating birds is completely up to you!

Option 2: Visit a variety of different wetland habitat types (cattail marshes, wooded swamps, coastal marshes, etc.) within your block. Aim to visit a couple different wetland types within your block, spending at least 10 minutes at each location looking and listening for birds during the morning or evening, with 1 survey each between May 15-31; June 1-14; and June 15-25.



Wetland Profiles:

Wooded swamps are forested wetlands which include floodplain hardwood forests, red maple swamps, and cedar swamps. These wetlands have at least a moderate canopy cover and many trees over 5m in height. Focal species found in wooded swamps include American Coot and Green Heron.

Freshwater emergent marshes are open freshwater wetlands characterized by a high degree of emergent vegetation such as cattails, bulrushes, sedges, reeds, and grasses. These wetlands may be found on the borders of lakes, rivers, and ponds. Unlike wooded swamps, large trees are less common in emergent marshes. Focal species found in emergent marshes include American Bittern, American Coot, Common Gallinule, Green Heron, Least Bittern, Pied-billed Grebe, Sora, and Virginia Rail.

Coastal Salt Marshes are wetlands with salt or brackish waters that are found only along the coast of Maine and near the openings of estuaries. Grasses are the primary vegetation in these wetlands and large trees are a rarity. Focal species found in coastal salt marshes include Green Heron, Least Bittern, Pied-billed Grebe, Sora, and Virginia Rail.

Breeding Bird Behaviors:

Looking and listening for signs of breeding (characterized by the breeding codes) is fundamental to our atlas effort. Observing these behaviors when making observations in wetland areas is not always easy. In some cases, the highest code that may be observed will only be an indicator that the birds are “Possible” breeders. These behaviors include the “Singing birds” (**S**) or “In Appropriate Habitat” (**H**) codes discussed in the “What to listen for” section. Remember that you can elevate the level of confidence that these birds are breeding in your block to “Probable” if you hear the same birds vocalizing during your revisit to the site 7+ days later (**S7**) or if you hear multiple singing males of the same species (7+) in a block (**M**).

While listening for birds will likely be the primary way in which many wetland species are detected, you should still bring your binoculars or spotting scope along to watch for other indicators of breeding birds. Birds may be observed chasing off competitors, visiting probable nest sites, or moving together in pairs. In some instances, you may even be able to confirm breeding for a wetland species should you witness behaviors like adults carrying nesting material in their bills (**CN**), adults carrying food to their young (**CF**), or spot some recently fledged young (**FY**). On rare occasions, you may be fortunate enough to discover a nest with young (**NY**) while conducting your observations. We do not recommend seeking out these birds or their nests. Simply report what you are able to observe from a safe and respectful distance.

Please do not use playback to stimulate birds to vocalize. The use of playback can have a disruptive effect on nesting birds if used improperly. Playing recorded vocalizations can cause birds to expend energy, become stressed, and become distracted from their usual activities (foraging, nest building, care of young, etc.). It is for these reasons that we ask that volunteers strictly adhere to the project protocol outlined in this document. We ask that you please do not use playback to stimulate birds to vocalize and instead rely on detecting birds that are naturally visible and/or vocalizing.

Thorough summaries of each of the above breeding codes can be found in the Maine Bird Atlas Volunteer Handbook.



Submitting Bird Records:

Refer to the Maine Breeding Bird Atlas Volunteer Handbook for a detailed description of the options for submitting your bird records to the Maine Bird Atlas through eBird or on paper forms. On some of your marsh surveys, you may not detect any species. It is very important that you still send us this information since knowing where species are not found is just as important as knowing where they are found. If you are submitting your bird records directly into the Maine Bird Atlas eBird portal, you can simply submit a checklist without any species noted in your list. If you have any questions about any of this, please contact the Maine Bird Atlas Coordinator (mainebirdatlas@gmail.com).

Resources:

For more information about the Maine Bird Atlas (project of the Maine Department of Inland Fisheries and Wildlife, visit: <http://www.maine.gov/birdatlas>

If you have questions or comments, contact: Glen Mittelhauser, Maine Bird Atlas Project Coordinator, Maine Natural History Observatory, 317 Guzzle Road, Gouldsboro, ME 04607 (207)963-2012 - mainebirdatlas@gmail.com

Maine's Secretive Marshbird Species

Pied-billed Grebe: The Pied-billed Grebe is a stocky grebe which inhabits Maine's lakes, ponds, and brackish wetlands with ample emergent vegetation. Some birds arrive on breeding grounds already paired. This grebe species is highly territorial and can frequently be heard vocalizing from within vegetation. The typical call is a far-carrying rapid, then decelerating series of hollow calls that is distinctive yet hard to describe. The pair constructs a floating nest and also maintains it daily up to 3 weeks after hatching, usually with material collected within 50 meters of the nest. Young are downy and precocial, brooded on the back under adult's wings, either on the nest platform or on the water. This species is known to be declining in Eastern North America.

Safe Dates: May 15th to July 25th (applicable for **S** or **H** codes, and use codes in the "Probable" breeding category with caution if outside these dates).

Breeding Evidence: For observations of a silent bird or one giving its greeting rattle call from within emergent vegetation within the safe dates and in appropriate breeding habitat, use code **H**. If you hear their complex song within the safe dates, use code **S**. The simplest way to upgrade this to a "Probable Breeder" is to listen again at the same location 7 or more days later to upgrade the code to **S7**. These birds are highly territorial, so any behaviors that can be associated with chasing other species away can use code **T**. Young can be brooded under the wings or on the back of a swimming adult, so pay close attention for an adult bird holding its wings at a funny angle, and use code **FL** if young are observed as long as the young are not capable of strong flight. Since this species maintains their nest for some time, keep an eye out for adults repairing the nest (code **NB**).

American Bittern: The American Bittern's crepuscular habits and cryptic plumage have resulted in this species being one of the most understudied wetland species. Like other bitterns, American Bitterns are highly secretive and attempt to blend into their surroundings which they frequently accomplish by pointing their bills straight into the air. Observers who go out early in the morning, late in the evening, or even out at night during May can hear this bird's unique, 'pumping' song that can be described as a resounding repetition of one to 10 "dunk-a-doo" vocal-



izations. American Bitterns nest in stands of dense emergent vegetation perched over water and birds often access the nest along worn pathways. Females feed chicks a regurgitated diet. This species is sensitive to human disturbance, so best to keep your distance from potential breeding birds. Loss of wetland habitat has resulted in widespread population declines in recent decades.

Safe Dates: May 1st to July 25th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: For observations of a silent bird or if you hear one flush within the safe dates and in appropriate breeding habitat, use code **H**. If you hear the “*dunk-a-doo*” vocalization within the safe dates, use code **S**. If you hear one vocalizing, return to the same location 7 or more days later to upgrade to the **S7** code. Their song can be heard from up to a mile away, so be sure to code the bird into the correct Atlas block if you are near a block boundary. They are less likely to call from early June onwards, so best to listen for this species early. The “*chu-peep*” call performed by males during copulation provides an even higher degree of certainty that the species is breeding (code **C**), although this is rarely observed and should be carefully documented. Although you should **never attempt to find this species on a nest**, if you observe adults repeatedly going into a dense patch of vegetation and staying there for some time, you can use code **ON**.

Least Bittern: Not only is the Least Bittern incredibly secretive, but it is also the smallest heron species in the world. These two qualities make it a particularly difficult species to observe. Being so small, the Least Bittern can climb on emerging vegetation, particularly the bulrushes and cat-tails found in its most favored habitat. When threatened, the Least Bittern will freeze and remain motionless until danger has passed. Luckily, this species is quite vocal during the breeding season and will respond aggressively to another individual calling. In addition, their calls increase as summer progresses, peaking in July. Their song is a series of soft, low-pitched “*kuh-kuh-kuh-kuh*” notes, similar to “*cu-cu-cu*” call of Black-billed Cuckoo. Least Bitterns nest on an elevated platform perched over water with an overhead canopy, so it is unlikely to be observed. Nest is constructed primarily by the male, and nest maintenance continues throughout incubation since the nest gradually sinks under weight of growing young. Adults feed chicks a regurgitated diet. While Least Bittern are solitary foragers, they can nest colonially near abundant sources of food. This species is usually found in central and southeastern Maine.

Safe Dates: May 15th to July 25th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: For observations of a silent bird or if you hear one flush or give an alarm call within the safe dates and in appropriate breeding habitat, use code **H**. If you hear their soft, low-pitched “*kuh-kuh-kuh-kuh*” notes (usually 4-parted) within the safe dates, use code **S**. If you hear one singing, return to the same location 7 or more days later to upgrade to the **S7** code. Remember that their calling increases as the summer progresses, peaking in July. Since males continue nest maintenance through incubation, look for birds carrying vegetation (code **CN**). *The Least Bittern is a state-listed Endangered Species. Keep a respectful distance of 300’ or more from nest sites and young birds and depart from the area if birds become distressed during your observations.*

Green Heron: The Green Heron is another small and secretive heron. It is frequently observed with its neck tucked down while hunting, and is found in a wide variety of wetland habitats. Individuals give a loud, metallic “*keow*” call, often given in flight and often this is punctuated by a stream of white defecation, resulting in one of its nicknames - chalk-line. Courtship includes display flights usually interspersed with a number of non-aerial movements, calls, and displays. The



Green Heron often nests in trees overhanging shallow water or in a secluded cove, either alone or in loose aggregations. Unlike other heron species, Green Herons tend to stay close to their nesting area. The male typically gathers nest material for the female who builds the nest. Green Herons are typically found in the southern half of Maine.

Safe Dates: May 15th to August 15th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: For observations of a silent bird or their “*keow*” call heard within the safe dates and in appropriate breeding habitat, use code **H**. If courtship displays or flight displays are observed, use code **C**. If two Green Herons are observed interacting in a way that suggests a pair, use code **P**. Since both males and females construct the nest and there is sometimes an exchange of vegetation from between a pair, look for birds carrying vegetation (code **CN**) or working on the nest (code **NB**). Again, it is not necessary to find the actual nest.

Virginia Rail: The Virginia Rail is secretive and well-adapted to navigating within dense vegetation, thus this species is challenging to observe directly. This rail is a habitat generalist, nesting in sedge or cattail marshes and also thick shrubby wetlands. The song is a series of metallic notes with an accelerating tempo like the bouncing of a ball, with the notes closely paired towards the end of the call, typically given in May or June. Other vocalizations include a series of grunts that tends to trail off at the end, and this is the most frequently heard call. Pairs also perform grunting duets to defend territories and solidify their pair bond. Adults build multiple “nests” within their territory, although only one is used for nesting. Nests are well concealed, often with a vegetation canopy constructed by bending adjacent plant stems over the top of the nest. Adults have been observed carrying eggs and nestlings in their bill, presumably moving them to alternate nests.

Safe Dates: May 15th to August 1st (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: For observations of a silent bird within the safe dates and in appropriate breeding habitat, use code **H**. If you hear their vocalizations within the safe dates, use code **S**. If you hear one singing, return to the same location 7 or more days later to upgrade to the **S7** code. If you hear a pair singing a duet of alternating grunt calls, observe a pair courtship feeding, preening each other, chasing, or copulating, use code **C**. If fighting, chasing, or territorial displays or calls are observed or heard, use code **T**. Paired individuals will stand quietly side by side for long periods (code **P**). Since birds continue nest maintenance through incubation, look for birds repairing the nest (code **CN** or **NB**).

Sora: The Sora is a rail species found in a variety of freshwater wetlands of almost any size, feeding on wetland plants and aquatic invertebrates. Like Maine’s other rail species, the Sora is more likely to be heard than seen. Males give a shrill, descending “*whinny*” song and a 2-noted *ker-wee* vocalization, often vocalizing at night. Male vocalizations diminish as the summer progresses, so best to listen for them in May and June. They aggressively defend territories against conspecifics and use many threat displays and chasing to maintain territories. Soras build nests in cattails and sedges, often on the edge of habitat types or next to a patch of open water. The male typically gathers nest material for the female who builds the nest.

Safe Dates: May 15th to August 1st (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: For observations of a silent bird or you hear one flush or give an alarm call within the safe dates and in appropriate breeding habitat, use code **H**. If you hear their “*whinny*” song within the safe dates, use code **S**. If you hear one singing, return to the same location 7 or more days later to upgrade to the **S7** code. Remember that their calling decreases



as the summer progresses, so best to listen for them in May and June. If fighting, chasing, or territorial displays are observed, use code **T**. Since there may be an exchange of nest materials from males to females, look for birds working on the nest (code **CN** or **NB**).

Common Gallinule: The Common Gallinule is a large species of rail found breeding in the freshwater and brackish marshes along the Maine coast. The wetland they inhabit tend to be characterized by tall emergent vegetation and interspersed with pools covered in floating plants. Males advertise their territories with a song referred to as a cackle – “ka-ka-ka-ka-ka-kee-kree-kree-kree-kree-kree” – which can be heard over great distances. Nests are typically constructed from wetland plants in dense vegetation near open water. Like other rails, Common Gallinule build multiple nests for displaying, incubating, and brooding. Nests are provisioned with fresh materials up through incubation. Both parents incubate their eggs and will perform distress displays and calls if disturbed. Such agitated displays include swanning (arching the wings above the back, neck extended, and flashing white tail patches) and churning (vigorous treading of the water and body raising). Downy, black chicks leave the incubation nest soon after hatching and follow adults in search of food (both plant and animals matter). Both adults brood their young on brooding platforms during cold or foul weather. Young Common Gallinule remain in the care of their parents between 40-50 days before becoming independent.

Safe Dates: May 25th to August 15th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: The habits and habitat of the Common Gallinule means it is a bird more likely to be heard than seen. Hearing the loud cackle song of the adult male within the safe dates should be coded as **S** and can be upgraded to **S7** if heard in the same block 7 or more days later. Nest sites are typically well-hidden, however, if you observed a Common Gallinule visiting a probable nest site within dense vegetation, code it as **N**. Since these birds construct multiple nests to serve different purposes, nest building Common Gallinule should be coded as **B**. Given that young gallinule chicks leave the nest soon after hatching, adults traveling with recently fledged young (code **FL** if not capable of sustained flight) or adults feeding young (code **FY**) may be observed. *The Common Gallinule is a state-listed Threatened Species. Keep a respectful distance of 300’ or more from nest sites and young birds and depart from the area if birds become distressed during your observations.*

American Coot: The American Coot is another large rail species which is often described as looking like a large, black chicken which swims on open water. American Coots are highly vocal with varied grunts, squawks, honks, and croaking. The males give a crowing call to advertise the limits of his territory. Courting males give a sharp “perk” call while displaying females give a nasally “punt, punt” call to invite males to join them on the nest. This bird will inhabit a wide array of habitats including lakes, ponds, marshes, sewage ponds, and even roadside ditches. Nesting primarily takes place in the marshes with dense vegetation (primarily cattails and bulrushes) with floating nesting platforms being built near open water. American Coots will construct dummy nests for displaying and brooding young. The American Coot is currently known to breed only in central Maine.

Safe Dates: June 1st to August 5th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: For individuals observed or other calls heard within the safe dates and in appropriate breeding habitat, use code **H**. If you hear a male giving a crowing call to advertise its territory within the safe dates, use code **S** and upgrade to **S7** if heard at the same location 7 or more days later. If an individual is observed visiting a probable nest site or building a



platform, use code **N**. Since multiple nest-like platforms are built but not all are used for nesting, if you observe a bird carrying nesting material, use code **B**. The best way to confirm breeding is to observe the downy young (code **FL**) or observe the young being fed (code **FY**). *The American Coot is a species of Special Concern in Maine. Keep a respectful distance of 300' or more from nest sites and young birds and depart from the area of birds become distressed during your observations.*

Sedge Wren: The Sedge Wren is exactly what its name implies— a wren typically associated with sedge-dominated wetlands. The breeding range of this species is generally west of Maine, however, Sedge Wrens are occasionally reported in Maine during the breeding season, often not initiating nesting until July, August, or even September in Maine. This small wren is highly secretive and nests within dense growths of sedges and grasses in wetlands on the edge of ponds, freshwater marshes, and coastal marshes. Males song is a dry staccato chatter “*chip, chip, chrrr-rr-rrr*” and can call throughout the day and night. Like many other wren species, the Sedge Wren will construct multiple nests. The nest is typically a spherical mass of sedges and grasses with an entrance on its side. Sedge Wrens are known to destroy the nests and eggs of competing pairs or those of other birds.

Safe Dates: June 1st to August 1st (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: If you observe a silent bird or hear any of their calls within the safe dates and in appropriate breeding habitat, use code **H**. If you hear dry staccato chattering song of the male within the safe dates, use code **S** and upgrade to **S7** if heard at the same location 7 or more days later. Since multiple dummy nests are built, if you observe a bird constructing a nest or carrying nest material, use code **B**. If agitated behavior is observed, use code **A**. If a Sedge Wren is observed destroying the nest of another pair or bird or squabbling is observed, use code **T**. If two individuals are observed together or interacting in a manner that suggests a pair, use code **P**. The best way to confirm breeding is to observe an adult carrying a fecal sac (code **FS**), carrying food (code **CF**), or observe the young being fed (code **FY**). *The Sedge Wren is a state-listed Endangered Species. Keep a respectful distance of 300' or more from nest sites and young birds and depart from the area if birds become distressed during your observations.*

Maine's Other Wetland Bird Species

The following species profiles detail some of other wetland species you may encounter while making observations of secretive wetland bird species. Breeding records of any of these species should be documented whenever possible. Remember that it is never necessary to approach the nest of any bird. Consider the information below as reference only for other species you may encounter in wetlands. Do not get overwhelmed by the number of these species accounts.

Waterfowl

Canada Goose: The Canada Goose is one of the most familiar and abundant waterfowl species in all of North America. This medium-sized goose breeds within a variety of wetland habitat types. These birds nest along the shores of lakes, ponds, and wetlands or on hummocks and islands within wetland areas. Nest sites are frequently used year after year. Birds are highly territorial during the breeding season, with threats and fights common before incubation begins. Although adults on nests can sometimes be difficult to detect if deep within a wetland, adults can readily be observed foraging on land and on the water with their goslings not long after hatching. Large migratory populations move through the state in the spring and fall so watching safe dates



is necessary for some codes.

Safe Dates: April 25th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: If a bird is seen or heard within the safe dates and in appropriate breeding habitat (wetlands, ponds, and coastal islands), use code **H**. Pairs may be recognized very early in the spring when birds are not at breeding locations, so this code should be used cautiously. For any indications of territoriality, including threats and fights (common during breeding season), use code **T**. If a Goose is observed visiting a probable nest site (near water or more frequently on islands), use code **N**. Adults are readily observed with goslings soon after hatch and this confirms breeding (code **FL**), but this code should not be used once the young are capable of flight (young are usually about 9 weeks old when capable of sustained flight).

Mute Swan: Mute Swans are not native to the United States but were introduced from Europe. Since their introduction, these birds have expanded their range into southern Maine. These large elegant-looking, white swans are notoriously aggressive, particularly during the breeding season where conflicts over territory can arise. They can be found in habitats ranging from small ponds to large wetland areas. Nests are frequently constructed near water, along a shoreline, or on islands. While recently hatched young feed themselves, they can sometimes be observed riding on the backs of adult swans.

Safe Dates: May 1st to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Mute Swans have been documented as breeding in Maine, although none have been reported recently. All breeding observations should be carefully documented.

Wood Duck: The Wood Duck is a showy species associated with beaver ponds, slow-moving streams, and wooded swamps. They nest in hollow tree cavities (often old Pileated Woodpecker nests) and manmade nest boxes. Young ducklings will leap from the safety of these high nests to follow their mother to open water. The young are not capable of sustained flight until they are 8-10 weeks old. Males perform a loud whistling call to keep in contact with partners. During the nest selection process, males will give a “jibjibjib” call while the female is checking out potential nest cavities. Females give a “hawk” call during pair formation and courtship, although pairs form and courtship displays can occur during winter and spring migration. Males do not defend a specific territory, but instead defend a small moving territory around mate. Pairs regularly produces 2 broods per breeding season. Immature birds frequently gather in groups after independence from parents and, when capable of flight, disperse up to 11 km from their natal wetland.

Safe Dates: May 5th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: If a bird is observed within the safe dates in an area with appropriate nest boxes or tree cavities present, use code **H**. If a bird is observed visiting a probable nest site (such as a nest box or tree cavity) within about a week of the breeding safe dates, use code **N**. Pairs form during winter and migration, so observations of a male and female together should not be coded as a pair (code **P**) until after about 1 May. Adding comments about what you observed when outside of the species safe dates will be a big help. Males are territorial (code **T**) and will chase away or attack a rival, although it is rare to observe these behaviors. Courtship displays or copulation (code **C**) can be observed during winter and during migration, so this code should be used only during the breeding season after about 1 May. Observing young before they are capable of sustained flight (code **FL**) is the best way to confirm breeding for this species.



Blue-winged Teal: The Blue-winged Teal is a small duck and one of the last duck species to arrive to Maine each spring. Teal are associated with small ponds and wetland areas where they nest in grassy clumps of vegetation. Pairing occurs on the wintering grounds, and the pair bond remains strong until the second or third week of incubation. Agonistic behavior peaks during the breeding season and can include chasing and threat displays. Hens, who are solely responsible for incubation, are difficult to flush and will often sit tight when threatened. If flushed, hens will feign injury and perform distraction displays.

Safe Dates: May 25th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Breeding behaviors are not often easily observed in Blue-winged Teal. Observing a bird adjacent to wetlands and small ponds within the safe dates can be coded as **H**. Pairs form during winter, so observations of a male and female together should not be coded as a pair (code **P**) until after about 20 May. Similarly, agitated behavior (code **A**) and territorial behavior (code **T**) should not be coded until after about 20 May. Adding comments about what you observed when outside of the species safe dates will be a big help. Observing young before they are capable of sustained flight (code **FL**) is the best way to confirm breeding for this species (young are usually about 4-7 weeks old when capable of sustained flight).

Northern Shoveler: The Northern Shoveler is a large dabbling duck noted by its impressively large bill. This species migrates through much of the state, but may sporadically nest in the easternmost or northern portion of Maine (they nest in nearby New Brunswick, Canada). Breeding was first documented in Maine at Easton in 1979. Pairing occurs on the wintering grounds, and the pair bond remains strong until the young hatch. It is associated with a wide variety of wetland habitats and is known to nest on sewage treatment ponds. Males aggressively defend a territory. Potential nest sites are assessed by low-flying pairs and the nests are typically a simple scrape with a low vegetative cover. Broods are cared for by hens who lead young birds from wetland to wetland.

Safe Dates: May 25th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: The breeding range of the Northern Shoveler falls outside of Maine, but was confirmed breeding at one location in Maine during the first atlas. All breeding observations should be carefully documented.

Gadwall: The Gadwall is a dabbling duck which may nest in the northwestern and easternmost portions of the state where it was first documented nesting in 1976. In Maine’s first atlas, there was one record of confirmed breeding along the mid-coast. These understatedly-plumed ducks inhabit shallow lakes, ponds, and marshes. Pairs nest on the ground along the shores of vegetated wetland areas and show a preference for islands over mainland shorelines, however, they will also nest in meadows and fields. Hens brood precocial young in mid-June to late-July and lead them from the nesting area to a brooding site characterized by lots of emergent vegetation (for cover) and adjacent open water (for foraging).

Safe Dates: May 25th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: The breeding range of the Gadwall falls outside of Maine, but was confirmed breeding at one location in Maine during the first atlas. All breeding observations should be carefully documented.



American Wigeon: The American Wigeon is a handsome dabbling duck species that was first found breeding in Maine at Corinna Stream in 1975. Males give a nasal whistling vocalization that can be heard throughout the year. This species inhabits lakes, river deltas, and small ponds in northern and eastern Maine. Nests are typically constructed on land and are well-concealed in vegetation. Females care for precocial young until they are fully grown. Young leave (or are left) from the care of their mother around 40-50 days after hatching.

Safe Dates: May 15th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Breeding behaviors are not easily observed in American Wigeon. All breeding behaviors should be carefully documented.

Mallard: Perhaps the most familiar of all waterfowl species, the Mallard is widespread and inhabits nearly all wetland habitat types in the northeast. Mallards can be found year-round throughout much of Maine. Pairs form on their wintering grounds. During the evening, pairs fly together in search of suitable nesting sites. Mallards nest near water in areas with dense vegetative cover and will occasionally nest in trees or reuse a nest of another bird. Although pairs seek out suitable nest sites together, only the hen will incubate her clutch of eggs. Hens are also solely responsible for care of ducklings once they hatch, and will perform broken-wing distraction displays to lead predators away from young.

Safe Dates: May 5th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Mallards nest on the margins of a variety of wetland and open water habitats including marshes, lakes, rivers, ponds, streams, and roadside ditches. Mallards observed in these appropriate habitats with the safe dates can be coded as **H**. Nests are typically constructed near water and under the cover of vegetation. Mallards observed entering such sites can be coded as visiting a probable nest site (code **N**). In some instances, a hen may be observed sitting on the nest (code **ON**). Observing young before they are capable of sustained flight (code **FL**) is the best way to confirm breeding for this species (young are usually 8-10 weeks old when capable of sustained flight).

American Black Duck: The American Black Duck is a northeastern dabbling species that is often confused with the Mallard. This species can be found along the coast year-round, but breeds throughout the entire state. They nest in a wide variety of wetland habitats, although they are typically associated with more secluded habitats such as coastal salt marshes and forested islands in rivers. Nests are typically built away from open water and consist of a simple scrape lined with whatever vegetation is nearby. Hens continue to maintain these nests throughout the nesting season. Occasionally abandoned nests in trees or tree cavities are used as nest sites. Hens, alone, incubate and will sit tight on the nest if alarmed. If disturbances persist, hens may perform a broken wing display. Hens brood their young for several weeks after hatching and can be found with ducklings while foraging for food.

Safe Dates: May 5th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: American Black Ducks nest in a wide variety of areas, usually in close proximity to water. If adults are observed within the safe dates in suitable habitat, use code **H**. Although observing these birds on their nests is challenging, confirming breeding for this species can be easily done if a hen is foraging with her ducklings (code **FL**) and the young are not yet capable of sustained flight.



Northern Pintail: This elegantly-plumed dabbler is well named, as the Northern Pintail has a long, thin, pointed tail. They inhabit lakes, ponds, and marshes during the breeding season, but typically nest away from water. Pairs, led by the hen, fly together in search of suitable nesting sites in grasslands, cropland, and brushy areas. Nests are constructed from grasses and other nearby vegetation. Northern Pintails will nest in more open areas than other ducks species and dense vegetative cover is not always utilized. Hens care for ducklings after hatching and will perform a series of distraction behaviors when threatened including feigning a broken wing, swimming around intruders, and circling in flight. Males travel to nearby wetlands once incubation commences. Due to the generally great distances Northern Pintails nest from water, hens must lead ducklings on long, overland trips to wetlands.

Safe Dates: May 20th to August 5th (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: The breeding range of the Northern Pintail falls just outside of Maine. Further, observing breeding behaviors in this species is challenging. All breeding observations should be carefully documented.

Green-winged Teal: The Green-winged Teal is Maine’s smallest duck species. This tiny duck inhabits wooded wetlands and small ponds in southern, eastern, and northern Maine. Males guard their mates to prevent courtship and copulation from competitors. Males accompany females while seeking nest sites, but only the female builds the nest. Nests are typically constructed near water in wetlands dominated by sedges or grasses. Males abandon females as soon as incubation begins. Hens brood, lead, and protect young after hatching.

Safe Dates: May 25th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: If a bird is observed within the safe dates in an area with appropriate breeding habitat, use code **H**. If a pair are observed together within the safe dates, such as when seeking out a potential nest site, use code **P**. Nests are constructed under the cover of dense vegetation and consequently observing hens on the nest is rare. Hens must lead their ducklings to open water after hatching and continues to lead them once water is reached.

During this time, recently fledged young (code **FL** as long as they are not capable of sustained flight) are more easily observed and confirming breeding is less challenging.

Redhead: The Redhead is a large diving duck which nests on lakes, ponds, and vernal pools. This species is typically thought of as a northwestern waterfowl species though they are occasionally reported in the northeast during the breeding season. As in many other duck species, exploratory flights to seek out suitable nest sites precede nesting. They typically nest among emergent vegetation, particularly cattails and bulrushes. A nest of woven vegetation is constructed and added to over time until incubation commences. Hens take frequent breaks from incubation during which their nests are occasionally parasitized by other Redheads and other duck species. Upon hatching, hens will lead their young and protect them against predators with distraction displays.

Safe Dates: June 10th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: The breeding range of the Redhead falls outside of Maine, but includes parts of New York and Quebec. Nest sites are typically well-hidden, but hens with recently fledged young (code **FL** as long as they are not capable of sustained flight) are more visible when foraging on open water. All signs of breeding within Maine should be carefully documented.



Ring-necked Duck: The Ring-necked Duck is a widespread species particularly associated with marshy habitats. They nest in freshwater marshes, boreal bogs, and shallow lakes and ponds. Pairs swim together looking for openings in emergent vegetation or make exploratory flights in the morning to seek out nest sites. Nests are typically built over water, well within vegetated areas and away from their open water feeding areas. Habitats dominated by sedges and leatherleaf are typically used for nesting. Although birds arrive in Maine as early as March, nest initiation tends to peak in mid- to late-May. Hens alone care for young after hatching and they rarely stray far from their brood.

Safe Dates: June 1st to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: If a Ring-necked Duck is observed within the safe dates in the appropriate habitat, such as the edges of wetland areas, particularly those dominated by sedges and leatherleaf, use code **H**. If pairs are observed together seeking out potential nest sites, use code **P**. Once young have hatched, they may be observed foraging out in the open in close proximity to their mother (code **FL** as long as they are not capable of sustained flight).

Common Goldeneye: The Common Goldeneye is a widespread diving duck species which can be found year-round on open waters throughout most of the state. These ducks perform courtship in the winter months and arrive to their breeding grounds paired. They nest in tree cavities and nest boxes in woodlands adjacent to lakes, ponds, and streams. Although these nesting sites are typically close to water, they can sometimes be nearly a mile distant. Females will regularly return to previously used nesting sites. Hens perform all incubation and care for their young, which become independent soon after hatching.

Safe Dates: May 25th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: As cavity nesters who arrive to their breeding grounds already paired, observing breeding evidence for the Common Goldeneye is challenging. The best indicator that this species is breeding is the presence of recently fledged young that are not yet capable of sustained flight (code **FL**).

Hooded Merganser: Hooded Mergansers are the smallest mergansers which inhabit Maine’s lakes, ponds, and marshy areas. These ducks can be found year-round in southern Maine and breed in northern Maine. They nest in tree cavities and nest boxes along open water and wetland areas. Females seek out suitable nesting cavities the summer before they begin breeding. The same nest sites are often used year after year. Hens are solely responsible for incubation, and will perform broken-wing displays if young are perceived to be threatened.

Safe Dates: May 5th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Observing breeding evidence for Hooded Mergansers can be challenging. If you observe a bird entering a nest box or tree cavity, use code **N**. These sites are almost always in close proximity to water. If you observe a hen with her brood of recently fledged young not yet capable of sustained flight, use code **FL**.

Common Merganser: The Common Merganser is Maine’s largest and most widespread merganser species. They nest in woodlands near water and can be found foraging on lakes, rivers, and streams. Common Mergansers will nest within a variety of sites including tree cavities, nesting boxes, hollow logs, earthen burrows, abandoned buildings, or on the ground. When nesting on the ground, they will occasionally gather grasses to use as lining. The same nest site is often



used year after year. Males will typically stay near the nest site until the onset of incubation. Hens incubate eggs and will sit tight and hiss if threatened. Hatched young are led to nearby rivers, lakes, or ponds by the hen.

Safe Dates: May 25th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Observing breeding evidence for Common Mergansers can be challenging. The most likely observable evidence is observing a hen with her brood of recently fledged young not yet capable of sustained flight (code **FL**).

Ruddy Duck: The Ruddy Duck is an unusual looking waterfowl species typically associated with western North America. This species is occasionally reported in the northeast during the breeding season, and may breed in northern Maine’s freshwater wetlands, particularly sewage lagoons and impounded wetlands. Nests are typically constructed of dry, dead vegetation in dense emergent vegetation. Nests are often domed over with additional cover. Hens do not approach the nest directly, but instead dive and resurface at the nest. Hens care for young after hatching, but abandon their young before they have learned to fly.

Safe Dates: June 5th to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: The breeding range of the Ruddy Duck falls outside of Maine, but includes parts of nearby areas in Quebec, and the Canadian Maritimes. All signs of breeding within Maine should be carefully documented.

Loons

Common Loon: For observers near lakes, evening and nighttime choruses may include the haunting vocalizations of the Common Loon. They breed on lakes with clear water, abundant fish, and lots of small islands, which often serve as nesting sites. Individuals are capable of a number of vocalizations including wails, yodels, and tremolos. Pairs will often sing duets comprised of all these vocalization types just after sunset and sometimes into the night. Birds are highly territorial in the early weeks of the breeding season during which territorial yodeling and fighting between individuals may be observed. Pairs can be observed foraging together by day prior to incubation. Males and females assist in the construction of the nest located at the water’s edge and both members incubate eggs once laid. Chicks leave the nest with their parents within 24 hours of hatching and are initially completely dependent on their parents for food (such as crayfish and small fish). Young chicks may be carried on the back of their parent.

Safe Dates: May 15th – July 20th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: For observations of a silent bird within the safe dates on a potential breeding lake, use code **H**. If you hear wails or tremolos within the safe dates, use code **S** and upgrade to **S7** if heard at the same location 7 or more days later. Nests may be obscured by vegetation and difficult to see. In such cases when a loon is observed visiting a probable nest site, use code **N**. Birds may be observed courting, displaying, or copulating on open water (code **C**). If territorial defense, usually consisting of yodeling vocalization and physical altercations, is observed, use code **T**. Once hatched, chicks are always in the presence of their parents and can be highly visible (code **FL** as long as they are not capable of sustained flight). When a chick is discovered, behaviors such as feeding young (code **FY**) can often be observed.

Herons, Egrets, and Ibises

Great-blue Heron: The Great Blue Heron is perhaps the most well-known wading bird in



North America. They are colonial nesters and construct stick nests in snags or live trees in wetlands, uplands, beaver flowages, and on coastal islands. Colonies are typically established away from human development and roadways. Sticks for the nest are gathered by males and taken from the ground, trees, and even the unguarded nests of eagles. Colony sites and nests are generally reused year after year. Males and females both incubate the eggs and care for young after hatching. Vocalizations include the “go-go-go” call and the “awk” call, both given when disturbed at the nesting colony. Individuals may travel many miles from their breeding colonies to feeding sites. Do not assume that a colony is present within an atlas block simply because a heron is observed in good foraging habitat. Great Blue Herons are currently undergoing declines in Maine. The Heron Observation Network of Maine is a citizen science adopt-a-colony program in which volunteers monitor great blue heron colonies throughout the state and record information regarding the number of active nests each spring. The data provided by volunteers help Maine Department of Inland Fisheries and Wildlife biologists better understand the status of Great Blue Herons, a Species of Special Concern in Maine due to a decline in nesting pairs along the coast. There are many colonies in the state that have not yet been “adopted,” so they are always looking for more volunteers. In addition, Maine is a large state and is difficult to survey in entirety. All current and historic colonies that we know about are mapped and can be viewed on this website: <https://ifw.citizenscience.maine.gov/#/programs/heronObservationNetwork>. If you find a great blue heron colony that is not mapped, we would love to know about it. If you are interested in adopting a colony, reporting a colony, or want to find out more, please visit the Maine HERON Blog: <https://www1.maine.gov/wordpress/ifwheron/>, or email Danielle.dauria@maine.gov.

Safe Dates: May 1st to August 10th (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Observing breeding behaviors which indicate possible or probable breeding is challenging in this species, but luckily their nests can be fairly easily detected. Occupied nests (code **ON**) and nests with young (code **NY**) can be viewed once nest sites are discovered, but note that we strongly discourage closely approaching or disturbing nesting birds. If multiple birds are seen in a potential breeding area (i.e., wetland with many large snags or a stand of large pine trees with dead branches) that could contain a nesting colony, but the colony cannot be found, use code **N**. *The Great Blue Heron is a species of Special Concern in Maine. Keep a respectful distance of 300’ or more from nest sites and young birds and depart from the area of birds become distressed during your observations.*

Great Egret: The Great Egret is a large and elegant-looking heron plumed entirely in white. Their breeding range extends into southern Maine where they tend to nest on coastal islands and feed in coastal wetlands. Nests are typically constructed of sticks and are built in live trees or occasionally on the ground. Nests are prone to annual collapse or usurping by earlier arriving herons, thus males must generally gather materials and rebuild each year. These birds typically nest in colonies and often in the presence of other egrets, herons, ibises, or sometimes cormorants. Adults regurgitate fish for their nestlings.

Safe Dates: May 25th to July 15th (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: The breeding range of the Great Egret extends only into the southernmost region of the state. Consequently, all breeding behaviors should be carefully documented for this species. Observing breeding behaviors which indicate possible or probable breeding are more challenging than confirming this species. Occupied nests (code **ON**) and nests with young (code **NY**) can easily be viewed once nest sites are discovered, but note that we strongly discourage closely approaching or disturbing nesting birds. Given that nests must be recon-



structed nearly every season, males may be observed constructing their nests using twigs and sticks gathered from the surrounding area (code **NB** or **CN**).

Snowy Egret: Another all white egret, the Snowy Egret, has a breeding range which extends into southern Maine. These birds often share colonies with other egrets, herons, ibises, or sometimes cormorants. Colony locations may change from year to year and are often located in remote estuarine areas with dense vegetation. Males attract mates to their nest sites by performing a stretch display where they pump their bodies up and down while calling “*a-wah-wah-wah*”. Pairs work together to construct stick nests in trees, shrubs, and occasionally on the ground in dense vegetation. Parents regurgitate food either into the nest or directly into the mouths of their young.

Safe Dates: May 1st to July 15th (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Snowy Egret colony locations can change from year to year and those colonies are typically located in isolated areas. Consequently, breeding behaviors are rarely observed. All signs of breeding within Maine should be carefully documented.

Little Blue Heron: The Little Blue Heron looks somewhat like a colorful version of a Snowy Egret. Juvenile birds, however, are a strong contrast to adults and are nearly entirely white with yellow legs. Little Blue Herons are colonial nesters and inhabit coastal wetlands in the southern regions of Maine. Their nests are typically composed of sticks and are built in shrubs or small trees. Males display at the nest sites with branch-shaking, crest-raising, bill-snaps, wing-extensions, and a simple call “*unh*”. Nests are constructed at various heights depending upon the height of the nest-bearing vegetation and the space between nest sites is variable as well. Breeding colonies can be shared with other herons, egrets, ibises, and cormorants.

Safe Dates: May 1st to July 15th (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Little Blue Heron breeding behaviors are only rarely observed. All signs of breeding within Maine should be carefully documented.

Tricolored Heron: The Tricolored Heron is a colorful heron with shades of blue, purple, and rufous all prominently featured in its plumage. This large and graceful heron inhabits coastal wetlands and islands during the breeding season. While not known to currently breed in Maine (last documented nesting in Maine was in 2003), it is increasingly being reported during the breeding season in southern Maine. The bird frequently nests in colonies with other heron and egrets, but will occasionally nest solitarily. When nesting in a mixed species colony, Tricolored Herons are typically found nesting along the margins in denser vegetation. The construction of a nest platform by males precedes pair formation and copulation. These platforms are typically constructed in small trees at various heights, often in the same place year after year. Twigs are added to the nests following copulation. Eggs are incubated by both parents and, upon hatching, young are fed on a diet of regurgitated fish.

Safe Dates: May 1st to July 15th (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Maine is well north of the Tricolored Heron’s traditional breeding range although the species has been reported nesting in Maine in the past. All signs of breeding within Maine should be carefully documented.



Black-crowned Night-heron: Observers along the Maine coast may encounter the reclusive Black-crowned Night-heron. This heron is most active during the evening and night (hence the name). They inhabit swamps, marshes, and the edges of rivers, streams, lakes, and lagoons with fresh, salt, or brackish waters during the breeding season. Nest sites are selected by males and are typically constructed by the pair in a small tree over water. These birds give guttural, bark-like “*Quock*” calls while perched or in flight. Pairs have a distinct vocalization when a partner returns to the nest with food (“*Woc-a-woc, woc, woc, wock-a-woc*”), however, vocalizations are only rarely heard. Both parents incubate the eggs and feed their young upon hatching. Young beg for food with a distinct and persistent “*Yak! Yak! Yak!*” vocalization.

Safe Dates: May 1st to August 1st (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: The secretive and nocturnal nature of this species means breeding behaviors are only rarely observed. Consequently, all potential breeding records should be carefully documented. Should a colony site be located, observers may see pairs working to construct their nests (code **NB** or **CN**). Visiting the colonies later in the season increases the chances of observing incubating adults on nests (code **ON**) or nests with young (code **NY**), but note that we strongly discourage closely approaching or disturbing nesting birds. *The Black-crowned Night-heron is a state-listed Endangered Species. Keep a respectful distance of 300’ or more from nest sites and young birds and depart from the area if birds become distressed during your observations.*

Yellow-crowned Night-heron: The breeding range of the Yellow-crowned Night-heron ends well south of Maine. Nonetheless, this species has been historically documented breeding within the state. In their known range, this heron species inhabits swamps and forested wetlands. Yellow-crowned Night-herons form small colonies or nest as more scattered pairs. Platform nests are constructed from sticks in trees near water. Nest building is an important part of courtship in this species and nests may be initiated in several places before the final site is selected. Both parents incubate their eggs and brood hatched young. Young birds are fed on a diet of fish and crustaceans which are regurgitated into the center of the nest by their parents. This bird gives a raspy “*scaup*” and “*whoop*” calls throughout the night.

Safe Dates: May 25th to July 15th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: This bird’s secretive and nocturnal nature makes observing breeding behaviors a challenge. Consequently, all potential breeding records should be carefully documented.

Glossy Ibis: The Glossy Ibis is a medium-sized wading bird which inhabits the southern coastal region of Maine. It is often observed in large flocks within emergent freshwater and brackish wetlands. They breed in wetland areas in a diverse array of nesting habitats and may be found nesting in trees or in grasses. These birds nest in colonies, often mixed with other species of herons, egrets, and cormorants. Pairs construct a bulky nest of twigs, grasses, and leaves, adding to the nest until the young fledge. Pairs perform bows, allopreening, and bill touching when relieving one another at the nest, typically accompanied by a guttural vocalization. Young are fed by receiving a regurgitated meal of insect larvae and crustaceans. Within a week of hatching, young may climb branches in close proximity to the nest.

Safe Dates: May 1st to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: The limited range and remoteness of Glossy Ibis nest colonies means



observing breeding behaviors in this species is challenging. Locating a colony presents the best chance for documenting breeding as ibises may be observed on their nests (code **ON**) or nests with downy, altricial young may be observed (code **NY**), but note that we strongly discourage closely approaching or disturbing nesting birds.

White-faced Ibis: The White-faced Ibis is similar in appearance to the Glossy Ibis. The primary difference is that the White-faced Ibis has reddish-pink lores bordered with white feathers. This species is primarily considered a western species, but has increasingly been reported in southern Maine in flocks of Glossy Ibises. In their breeding range, White-faced Ibises inhabit marshlands with dense vegetation and low trees or shrubs. Nests are typically constructed in colonies in low trees over water or in vegetation on islands.

Safe Dates: May 5th to July 15th (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: The White-faced Ibis is a western species that is occasionally seen in Maine during the breeding season. All signs of breeding within Maine should be carefully documented.

Rails and Cranes

King Rail: Although difficult to observe, the King Rail gives a loud series of advertising vocalizations (abrupt “*kek-kek-kek-kek*”s or soft “*tuk-tuk-tuk*”s) that can be heard from within the marshy habitat they inhabit, oftentimes during the day. Like other rails, the King Rail has a grunt series vocalization it uses to communicate with its mate. They construct their nests in areas with shallow water and emergent vegetation. Nests placed in clumps of grasses and other vegetation and are composed of a base of decaying plant material topped with a cup of dry grasses. This large and secretive rail species has a breeding range along the east coast of North America, and was recently documented as breeding in Maine.

Safe Dates: May 25th to August 1st (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: King Rails are elusive within their breeding range during the nesting season. If a silent bird is observed foraging in appropriate breeding habitat within the safe dates, use code **H**. Listening for their songs (“*kek*”s, “*tuk*”s, or grunts) within the safe dates is the mostly likely evidence to be observed. Use code **S** for singing birds and upgrade to **S7** if heard at the same location 7 or more days later. King Rails are more visible as they forage along the edges of vegetation.

Yellow Rail: One of Maine’s more elusive potentially breeding birds, the Yellow Rail is notoriously difficult to observe. It inhabits the margins of sedge-dominant wetlands in the extreme northern portions of Maine. On its breeding grounds, the Yellow Rail silently skulks hidden among dense emergent vegetation by night. Breeding males give a repetitive, ticking “*click-click, click-click-click*” call well after sunset. This call has been likened to the call of a spring peeper or an insect. This rail species constructs two nests: one for incubating and one for brooding young. The incubation nests are constructed of fine grasses and are covered with a canopy of vegetation. While incubating, females rarely leave their nests and do so only to quickly eat. Within two days of hatching, the chicks are moved to the brooding nest. Within 3 weeks of hatching, the young begin feeding themselves.

Safe Dates: June 1st to August 1st (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: The Yellow Rail is a secretive species that is rarely detected in Maine



during the breeding season. All signs of breeding within Maine should be carefully documented. The Yellow Rail is a species of Special Concern in Maine. Keep a respectful distance of 300' or more from nest sites and young birds and depart from the area if birds become distressed during your observations.

Sandhill Crane: Sandhill Cranes are a recent addition to the wetlands of western and central Maine. Although these cranes may have historically bred in Maine, it wasn't until 2000 that breeding was confirmed in the state. Sandhill Cranes breeds in open marshes, bogs, and wetlands with abundant sphagnum moss. Pairs perform dance-like courtship displays prior to constructing their nests. These birds often give loud, trumpet-like calls which can be heard over great distances. Their nests are typically mounds constructed on floating vegetation not far from water. Sandhill Cranes may construct multiple nest mounds for brooding and feeding their young once hatched. Chicks may be brooded on the back or under the wing of the female. Both parents feed their young. When two chicks hatch, each parent assumes sole responsibility of one chick. These large birds perform a series of agonistic behaviors to fend off rivals or predators, including bill thrusts, kicks, and threatening postures.

Safe Dates: May 1st to August 1st (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: For observations of a silent bird observed within the safe dates in appropriate habitat, use code **H**. Sandhill Crane unison calls (“*tuck-a-tuck-a-tuck-a*”) within the safe dates can be coded as **S** and upgraded to **S7** if heard at the same location 7 or more days later. Birds may be observed exhibiting agitated behaviors such as standing alert and giving rattling guard calls (code **A**). Given that they often construct multiple nest mounds, code **N** should be used when birds are seen at mounds unless higher evidence is observed. This propensity for nest building also means the chances of seeing this behavior (code **NB**) is higher. If copulation or courtship dances are observed, use code **C**. Birds may be observed chasing or sparring with individuals of the same species or a predator (code **T**). If a pair is observed in suitable habitat together, but not performing courtship displays, use code **P**. Chicks leave the nest to forage with their parents soon after hatching. These recently fledged young (code **FL** as long as they are not capable of sustained flight) can be fairly conspicuous due to their size and the close proximity to their parents.

Terns

Black Tern: The Black Tern is unique among Maine's tern species in that they nest in freshwater marshes and not usually on the offshore islands. They also literally contrast with other terns in that, as their name suggests, they are predominately plumed in black. Pairs are formed prior to reaching the nesting grounds, however, site-selection and nest building is rapid, with egg laying beginning within just 4 days of arrival at the colony. Colonies are frequently formed in areas with shallow, still water and emergent vegetation. Nests are constructed of nearby vegetation piled on floating mass of vegetation, boards, or muskrat lodges and made into a cup. Adults arriving to feed their young typically give a “*kyew*” call when approaching the nest. Adults may dive-bomb, strike, mob, and give chase to intruders that approach their nest site.

Safe Dates: June 1st to August 1st (applicable for **H** code, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Observing breeding behaviors in the Black Tern is challenging. Birds range widely in search of food and may well cross atlas block boundaries while doing so. These birds may fly outside the colony area while foraging for fish and insects to bring back to their young. As such, code **H** (“in appropriate habitat”) should be used carefully for this species -



only when a historically-used colony site is within the block. If a known or suspected colony is located within your block, you may be able to confirm this species by watching for birds on nests (code **ON**) or nests with young (code **NY**) from a distance with a spotting scope or binoculars. Note that we strongly discourage closely approaching or disturbing nesting birds. *The Black Tern is a state-listed Endangered Species. Keep a respectful distance of 300' or more from nest sites and young birds and depart from the area if birds become distressed during your observations.*

Common Tern: The Common Tern is Maine's most common and widespread tern species with a breeding range along coastal and northeastern Maine. These terns typically nest on rocky islands, but will also nest on barrier beaches, saltwater marshes, and occasionally along freshwater lakes and in freshwater wetlands. Colonies are generally in areas that lack woody vegetation but with the cover of scattered annual herbaceous plant growth. Courtship and pair formation occurs once birds reach the nesting colony. Courtship can include flights over the colony carrying fish (while females pursue), parading (the male walks circles around the female), mate-feeding, and nest scraping (in which multiple nest scrapes can be made). Nests can be constructed in loose substrate (sand, gravel, earth), in depressions in rock, or, in freshwater situations, on muskrat lodges. Materials such as dead vegetation are added to the nest over time during incubation. Birds will aggressively defend the colony against intruders with calling (a harsh "keeeee-arr"), diving, mobbing, and pecking.

Safe Dates: June 1st to July 25th (applicable for **H** code, and use codes in the "Probable" breeding category with caution if outside these dates).

Breeding Evidence: Common Terns range widely in search of food and may well cross atlas block boundaries while doing so. As such, code **H** ("in appropriate habitat") should be used carefully for this species - only when a historically-used colony site is within the block. Make sure to keep you distance from and do not land on the managed seabird colonies along the Maine coast as researchers there are already submitting breeding records from those islands. Observing other breeding behaviors in this species is difficult due to the remoteness of typical colony sites. Nonetheless, if a colony is discovered, observers may see Common Terns on their nests (code **ON**). Although vegetation may grow and obscure nest sites as the season progresses, observers who visit Common Terns colonies earlier in the season may be able to see nests with eggs (code **NE**). *The Common Tern is a species of Special Concern in Maine. Keep a respectful distance of 300' or more from nest sites and young birds and depart from the area of birds become distressed during your observations.*

Wetland Songbirds

Alder Flycatcher: The Alder Flycatcher is a member of the flycatcher family which is famously difficult to identify by appearance alone. The most reliable method of identifying this bird is to listen for its song – "fee-bee-o". These flycatchers nests on the margins of wetland areas and wet meadows in shrubby thickets. Its breeding range covers all of Maine. Nests are typically constructed low within bushes and are composed of a loose cup of dry vegetation. Both parents incubate and then feed their hatched young. Young are fed a diet of damselflies, grasshoppers, and flies.

Safe Dates: June 1st to July 25th (applicable for **S** or **H** codes, and use codes in the "Probable" breeding category with caution if outside these dates).

Breeding Evidence: If you hear Alder Flycatcher "fee-bee-o" songs within the safe dates, use code **S** and upgrade to **S7** if heard at the same location 7 or more days later. Adults may be observed engaging in territorial chasing (code **T**) of individuals of the same species (typically



accompanied by a “*churr*” call). When nests are discovered, a number of observations can be used to confirm breeding for this species including birds sitting on nest (code **ON**), nests with young (code **NY**), or parents feeding insects to their young (code **FY**). Note that we strongly discourage closely approaching or disturbing nesting birds. You can confirm nesting before eggs are laid if adults are observed carrying nesting materials (code **CN**) (dried grasses, pine needles, dried cattail leaves, and small twigs) or assembling nests (code **NB**).

Willow Flycatcher: Another flycatcher, the Willow Flycatcher, looks almost identical to the Alder Flycatcher. The song of the Willow Flycatcher differs, however, and is described as “*fitz-bew*”. This species of flycatcher will inhabit wet woodlands and thickets on the borders of lakes and wetlands. Its breeding range is restricted to along southern and midcoast Maine. Males court females with a “*wheak-dee-dee*” call accompanied by a swooping display and frequently give chase during courtship. Nests are typically constructed in the crotch of branches in a small tree or shrub near water. Females construct their compact and tidy-looking nests alone from weed stems, bark, pine needles, and dry grasses. Nests are lined with feathers and cottony materials. Females are responsible for incubating and shading their eggs. Males and females ferry insects to begging young with very direct flights.

Safe Dates: June 1st to July 25th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: The Willow Flycatcher’s “*fitz-bew*” songs heard within the safe dates can be coded as **S** and upgraded to **S7** if heard at the same location 7 or more days later. Birds may be observed engaging in territorial chasing (code **T**) of individuals of the same species (typically accompanied by a “*churr*” call). Adults may be observed flying with bills loaded with insects to feed to their young (code **CF**). Observers who follow the flight of these food-bearing birds may observe these birds feeding their young (code **FY**) thanks to the direct flights these birds make to their nests.

Eastern Phoebe: When it comes to flycatchers, the Eastern Phoebe is surely Maine’s most familiar species. This is not due to the bird’s appearance, but because of this flycatcher’s habit of nesting on man-made structures. These birds are some of the first to arrive each spring and, though they inhabit a wide variety of habitats, they can frequently be found on the margins of wetland areas. Adults are highly territorial during the early part of the breeding season. During this time, agonistic vocalizations (“*chip!*”), chases, and sometimes physical fighting may be observed. Female phoebes construct their nest from mud, green moss, and a lining of fine grasses and hair. Nests are frequently parasitized by Brown-headed Cowbirds. Nestlings are initially fed on a diet of flies and spiders and are fed larger insects (such as moths) as they grow.

Safe Dates: May 1st to August 1st (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: For observations of a silent bird within the safe dates in appropriate habitat, use code **H**. Hearing the Eastern Phoebe’s “*fee-bee*” or “*fee-b-be-bee*” songs within the safe dates can be coded as **S** and upgraded to **S7** if heard at the same location 7 or more days later. Adults may be observed engaging in territorial chasing or fighting with individuals of the same species (code **T**). If seven or more individuals are heard singing in suitable habitat in the same block, use code **M**. As conspicuous nesters, it is often very easy to observe confirming breeding in this species.



Eastern Kingbird: The Eastern Kingbird is another species which frequently inhabits the margins of open wetland areas. They often nest in trees or snags overhanging areas of open water within wetlands and are highly aggressive in the defense of their nest and mates. The crouch display (in which a bird perches next to another kingbird and raises, spreads, and flicks its tail) is the most commonly used territorial posture. Pairs bond using rapid, zigzagging courtship flights. During the nesting season, adults will frequently give chase to ospreys, eagles, and other large raptors. Young are fed a variable diet of insects including beetles, dragonflies, damselflies, grasshoppers, wasps, and bees.

Safe Dates: June 1st to August 1st (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: For observations of a silent bird within the safe dates in appropriate habitat, use code **H**. Hearing their songs - “*dzit dzit dzit DZEE-tyurrit*” - within the safe dates can be coded as **S** and upgraded to **S7** if heard at the same location 7 or more days later. Agitated behavior is hostile and aggressive consisting of diving and crest-raising towards any intruder that too closely approaches its nest (code **A**). If an adult is observed performing territorial displays (such as the crouch display), chasing individuals of the same species, or pursuing a predator (or even nonpredatory species), use code **T**. Nests are often highly visible and adults are also typically active and vocal. As such, observing confirming breeding evidence (such as adults on the nest (code **ON**), nests with young (code **NY**), adults feeding young (code **FY**), and others) in this species can be easy to spot if nest sites are discovered. Note that we strongly discourage closely approaching or disturbing nesting birds. *The Eastern Kingbird is a species of Special Concern in Maine. Keep a respectful distance of 300’ or more from nest sites and young birds and depart from the area of birds become distressed during your observations.*

Marsh Wren: The Marsh Wren is another secretive and cryptically-plumed wren associated with wetlands. Unlike the Sedge Wren, this wren inhabits and nests within wetlands with a high density of cattails and bulrushes. Although difficult to observe, the long chattering song of the Marsh Wren can be heard from within the dense wetland vegetation. Males often chase competitors while singing vigorously early in the breeding season and typically mate with several females in a season. Males construct several domed nests from cattails, bulrushes, and grasses which are advertised to females. If a threat to the nest is perceived, females will leave the nest and call intensely nearby. Adults are also noted as being prolific egg destroyers and will destroy the eggs in other Marsh Wren nests when found in their territory. Males will even destroy the eggs of other marshland birds if discovered. Females are generally solely responsible for the care of young and feed them insects ranging from mosquito larvae (just after the nestlings hatch) to dragonflies (as the young mature).

Safe Dates: May 25th to August 5th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: For observations of a silent bird within the safe dates in appropriate habitat, use code **H**. If you hear the Marsh Wren singing its chattering song within the safe dates, use code **S** and upgrade to **S7** if heard at the same location 7 or more days later. If you observe adults constructing dummy nests, use code **B**. Females move through the territory of males when looking for a breeding partner. Males approach these visiting females holding their tail high and calling vigorously. Receptive females are then lead to the male’s nests. These behaviors should be coded as **C**. When disturbed at a nest site, an agitated female may call nearby (code **A**). A territorial male may be observed singing vigorously and chasing individuals of the same species or destroying eggs (of other Marsh Wrens or even other bird species). These territorial behaviors should be coded as **T**. If a pair is observed together (and remember,



a male may mate with multiple females in a breeding season), use code **P**. Females may be observed carrying food items such as beetles, caterpillars, and dragonflies to feed their young (code **CF**).

Northern Waterthrush: The Northern Waterthrush is not a thrush at all, despite a similar appearance consisting brown upperparts and a streaked, buffy breast. Rather, it's a wood warbler that inhabits Maine's wooded swamps, bogs, and lakeshores. While this large warbler can be active and even conspicuous at times, it is also known to silently skulk within thick shoreline vegetation. It's a crepuscular singer (its song is characterized as "*sweet sweet sweet swee wee wee chew chew chew chew*") and regularly gives "*chip*" calls from within its hiding places. Males court females with crest-raising, wing-twittering, and singing. Nests are built within the root systems of fallen over trees, in waterside banks, and in among clumps of ferns. Although only the female incubates the nest, males will often sing nearby during the nesting period. Both parents feed their young for about four weeks following hatching.

Safe Dates: June 1st to July 25th (applicable for **S** or **H** codes, and use codes in the "Probable" breeding category with caution if outside these dates).

Breeding Evidence: Hearing Northern Waterthrush songs ("*sweet sweet sweet swee wee wee chew chew chew chew*") within the safe dates can be coded as **S** and upgraded to **S7** if heard at the same location 7 or more days later. Nest sites can be well-hidden and very difficult to observe directly. Male will often sing in close proximity to the nest, usually in overhanging trees, helping to discern a nest's location. For an adult visiting a probable nest site (such as within the roots of a fallen tree), use code **N**. If two birds are observed interacting in a way that suggests a pair, use code **P**. In some instances, observers may see females gathering nesting materials such as mosses, grasses, twigs, pine needles, and deer hair (code **CN** or **NB**).

Common Yellowthroat: The Common Yellowthroat is another warbler species associated with wetland habitats. While the Common Yellowthroat is easily recognizable based on appearance, its song of "*wich-i-ty, wich-i-ty, wich-i-ty*" is also unmistakable. Indeed, listening for vocalizations may be the easiest way to verify the presence of this often-skulking songbird in thick vegetation. Both males and females defend their nesting territory by scolding and chasing off competitors. Nests are constructed in emergent vegetation such as cattails, bulrushes, and sedges. Females are the primary nest-builders and construct a bulky nest from dry plant materials near the ground. Males and female both capture and feed whole insects to their young.

Safe Dates: June 1st to August 15th (applicable for **S** or **H** codes, and use codes in the "Probable" breeding category with caution if outside these dates).

Breeding Evidence: For observations of a silent bird within the safe dates in appropriate habitat, use code **H**. If you hear Common Yellowthroat songs – "*wich-i-ty, wich-i-ty, wich-i-ty*" within the safe dates, use code **S** and upgrade to **S7** if heard at the same location 7 or more days later. Nests are typically built near the ground in the cover of vegetation. If an adult is observed entering a probable nest site, use code **N**. When threatened, birds will frequently give "*tchat*" calls and sometimes the male will drive the female to the ground. If these agitated sounds or behaviors are observed, use code **A**. If a bird is observed scolding and chasing individuals of the same species or a predator, use code **T**. Adults are typically active and vocal. As such, confirming breeding (such as adults on the nest (code **ON**), nests with young (code **NY**), adults feeding young (code **FY**), and others) in this species can be easily done if a nest site is discovered, but note that we strongly discourage closely approaching or disturbing nesting birds. Both parents share the responsibility of feeding their young and may be observed flying with bills full of insects (code **CF**).



Seaside Sparrow: In the southernmost portion of the state, a coastal sparrow known as the Seaside Sparrow may be rarely encountered. This coastal sparrow inhabits saltwater and brackish wetlands and nests in the cover of dense cord-grasses above the high tide mark. The song of the Seaside Sparrow is so complex that it is difficult to characterize and includes clicks, buzzes, trills, warbles, and other whistled sounds. Unlike the Maine's other coastal sparrow species, the Nelson's Sparrow and the Saltmarsh Sparrow, the Seaside Sparrow form pairs. Territorial clashes between males can involve physical fights where males pick and claw at one another in midair. Nonetheless, Seaside Sparrows will nest within close enough proximity that the species has been described as colonial. Seaside Sparrow colonies are frequently constructed in close proximity to open, muddy areas where they forage for food. Both male and females are involved in gathering and delivering food to their growing young.

Safe Dates: June 1st to August 1st (applicable for **S** or **H** codes, and use codes in the "Probable" breeding category with caution if outside these dates).

Breeding Evidence: The breeding range of the Seaside Sparrow falls just below Maine's southern border. Additionally, as a secretive species, hearing Seaside Sparrow vocalizations is one of the few means of indicating possible breeding in your atlas block. For these reasons, all potential Seaside Sparrow breeding records should be carefully documented. Observing adults carrying food items (typically delivered in a mucous-covered sack called a bolus) to feed to the young (code **CF**) is the most likely evidence that can be used to confirm breeding in this species.

Nelson's Sparrow: The Nelson's Sparrow is a wetland inhabiting sparrow found along Maine's coast. In Maine, these secretive songbirds nest in tidal wetlands dominated by cordgrasses and rushes. Like the closely related Saltmarsh Sparrow, this sparrow will re-nest in the event of flooding. Its song is a raspy "*p-tsssssh-uk*". This sparrow species does not form pairs. Instead, males mate with and guard several female mates. Females alone construct nests, incubate eggs, and care for and feed young after hatching. If threatened, a female will leave the nest and give alarm calls ("*tic*") from nearby. A second brood may be initiated after a first brood is successfully reared.

Safe Dates: June 1st to August 15th (applicable for **S** or **H** codes, and use codes in the "Probable" breeding category with caution if outside these dates).

Breeding Evidence: All potential Nelson's Sparrow breeding records should be carefully documented. Hearing their raspy song within the safe dates can be coded as **S** and upgraded to **S7** if heard at the same location 7 or more days later. Observing females carrying food items including insects and spiders to feed to the young (code **CF**) is the most likely evidence that can be used to confirm breeding in this species. *The Nelson's Sparrow is a species of Special Concern in Maine. Keep a respectful distance of 300' or more from nest sites and young birds and depart from the area of birds become distressed during your observations.*

Saltmarsh Sparrow: The Saltmarsh Sparrow is a tidal marsh specialist found along the Maine coast. This small sparrow nests within dense grasses and has a promiscuous breeding system where males breed with several females. This means each nest frequently has the eggs and nestlings of multiple males. Males will frequently give chase to females as part of courtship. Nests are constructed by females in clumps of grasses high enough to avoid flooding, but low enough to afford protection. On some occasions, these females will construct canopies over the nest to provide additional cover. In the event of a flooded nest, a replacement nest is quickly constructed. The song of the male is described as a complex whisper which is highly variable in nature. Females alone incubate and care for young after hatching. Young are fed insects, spiders, and small



crustaceans. When approaching the nest, females will often travel through tunnel-like passages in the grasses to avoid leading predators to the nest site.

Safe Dates: June 1st to August 15th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: All potential Saltmarsh Sparrow breeding records should be carefully documented. Hearing their song within the safe dates can be coded as **S** and upgraded to **S7** if heard at the same location 7 or more days later. Observing females carrying food items including insects, spiders, and small crustaceans to feed to the young (code **CF**) is the most likely evidence that can be used to confirm breeding in this species. Bear in mind, however, that female Saltmarsh Sparrow use cover when approaching their nests meaning even this type of breeding evidence is challenging to observe. *The Saltmarsh Sparrow is a species of Special Concern in Maine. Keep a respectful distance of 300’ or more from nest sites and young birds and depart from the area of birds become distressed during your observations.*

Swamp Sparrow: The Swamp Sparrow is a widespread species which inhabits a variety of wetland habitat types in Maine. Adults give their trilled song – “*weet-weet-weet-weet-weet*” - from within hardwood swamps, cattail marshes, bogs, sedge marshes, and occasionally brackish wetlands. This sparrow is a skulker, often remaining well-hidden in dense wetland vegetation, and thus its song or its call may be the best indicators of its presence during the breeding season. Nests are typically very well concealed. “*Chip*” calls are given by adults when alarmed or disturbed by a potential threat. While females are the sole egg incubators, both parents feed their young a diet of dragonflies and damselflies once hatched.

Safe Dates: May 20th to August 15th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Silent or calling Swamp Sparrows within the safe dates in appropriate habitat can be coded as **H**. If you hear their trilling songs within the safe dates, use code **S** and upgrade to **S7** if heard at the same location 7 or more days later. Agitated behaviors such as alarmed “*chip*” calling is should be coded as **A**. Swamp Sparrows may be observed engaging in territorial chasing or fighting individuals of the same species, which can be coded as **T**. Should a nest be discovered, there are several ways to confirm breeding in this species. These include observing a nest with young (code **NY**) or adults feeding their young (code **FY**). Note that we strongly discourage closely approaching or disturbing nesting birds Earlier in the season, both adults may be observed gathering nest building materials such as dry grasses, sedges, twigs, and rootlets (code **CN** or **NB**).

Red-winged Blackbird: There is perhaps no wetland bird more conspicuous than the bold and boisterous Red-winged Blackbird. With their striking red epaulets and loud song of “*conk-la-ree*”, males are generally easy to detect and observe. Females are streaky and better suited to blend into the wetlands within which they nest. Although physical conflicts are rare, males have a host of displays used to defend their breeding territories. These include epaulets-flashing flight displays, bill-tilts, perched epaulet flashes, and defensive fluttering. Courting males frequently chase females, sometimes in large groups. Males will also mob predators such as hawks and eagles. Males breed with several females each breeding season. These blackbirds will use a variety of wetland plants for nesting purposes including cattails, bulrushes, sedges, reeds, and willows and sometimes construct their nests over water to avoid predation. Males act as predator sentinels while the females incubate within his territory. Once hatched, dragonflies are heavily featured in the diet of young.

Safe Dates: May 10th to July 25th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).



ble” breeding category with caution if outside these dates).

Breeding Evidence: Observing a silently perched or a calling bird within the safe dates in appropriate wetland habitat can be coded as **H**. Bear in mind that birds will use a variety of habitats for nesting ranging from large wetlands to roadside ditches. Hearing their “*conk-la-ree*” song within the safe dates can be coded as **S** and upgraded to **S7** if heard at the same location 7 or more days later. Agitated adults will give alarm calls and mob intruders (code **A**). Males are highly territorial and observing them engaged in territorial chasing (code **T**) is common. These chases may include birds pursuing fellow blackbirds or predators like hawks and even eagles. Red-winged Blackbirds typically nest in close proximity to one another. If seven or more individuals are heard in suitable habitat in the same block, use code **M**. Adults are highly active, vocal, and therefore easily observable in the breeding season. As such, confirming breeding in this species (such as adults carrying nesting materials (code **CN**), building nests (code **NB**), adults gathering food (code **CF**), and adults feeding their young (code **FY**)) can be easily done if nest sites are nearby.

Rusty Blackbird: The Rusty Blackbird is a more northern-associated blackbird that occurs in the western and northern portions of the state. These birds nest in wet forests, bogs, beaver ponds, and the swampy borders of northern lakes. In Maine, Rusty Blackbirds build their nests in dense, shrubby trees near or over water - almost exclusively in spruce or fir trees. Females construct nests using twigs, grasses, and Old Man’s Beard lichen in trees with thick branches. The result is a well concealed and camouflaged nest. Females alone incubate their eggs but are provisioned with food by the male who feeds her at perches near the nest. Both males and females feed their young insects, often including dragonflies. This blackbird species is undergoing significant declines across its breeding range.

Safe Dates: May 15th to August 10th (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: Observing any breeding evidence for Rusty Blackbird is rare and should be carefully documented. If you hear Rusty Blackbird songs – rusty gate-like “*koo-a-lee*” -within the safe dates, use code **S** and upgrade to **S7** if heard at the same location 7 or more days later. If a silent bird is observed within the safe dates in appropriate habitat, use code **H**. Caution should be used when documenting breeding evidence because this species can often sound similar to the Common Grackle. *The Rusty Blackbird is a species of Special Concern in Maine. Keep a respectful distance of 300’ or more from nest sites and young birds and depart from the area of birds become distressed during your observations.*

Common Grackle: The Common Grackle is another conspicuous wetland species. Their song – a high-pitched “*readle-eak*” - is often described as sounding like a rusty gate being opened. While making this vocalization, the bird performs a “ruff-out” courtship display where the bird puffs out its plumage, spreads its tail, and extends its legs. Adults will attack competitors with pecks and scratches during the early part of the breeding season, especially during nest building. Males and females will defend territories against intruding grackles as well as Red-winged Blackbirds. Pairs will remain closely together until incubation begins (when the males typically depart). They typically nest in conifers near swamps and marshes, but will also nest in developed areas well away from wetlands. Nests are composed of a wide variety of materials including woody stems, leaves, grasses, bark, fishing line, paper, string, and many other materials. While females are primarily responsible for incubating its eggs and brooding the young, both parents are typically involved in gathering food and feeding. Young typically leave the nest within two weeks of hatching and are cared for by their parents for several weeks before departing and joining roosting flocks.



Safe Dates: May 1st to August 1st (applicable for **S** or **H** codes, and use codes in the “Probable” breeding category with caution if outside these dates).

Breeding Evidence: If you observe a silent bird within the safe dates in appropriate habitat, use code **H**. If you hear the Common Grackle “rusty gate” songs within the safe dates, use code **S** and upgrade to **S7** if heard at the same location 7 or more days later. If agitated behavior is observed, use code **A**. Because Common Grackle nest are often well-concealed high in conifers, adults visiting a probable nest sites should be coded as **N**. If the “ruff-out” courtship display or copulation is observed, use code **C**. If an adult is observed chasing or fighting individuals of the same species, other blackbirds, or chasing a predator, use code **T**. If two birds are observed interacting in a way that suggests a pair, use code **P**. If seven or more individual Common Grackles are heard in suitable habitat in the same block, use code **M**. Adults are highly active, vocal, and therefore easily observable in the breeding season. As such, observing confirming breeding evidence in this species (such as adults carrying nesting materials (code **CN**), building nests (code **NB**), adults gathering food (code **CF**), and adults feeding their young (code **FY**)) can be easily done if nest sites are nearby.