Bird Song Descriptions for the Viles Arboretum

Each bird species sings 'species-specific' songs during the nesting season to define and defend their breeding territories and to attract females. In spring, most species also sing while migrating through the Arboretum. From May through July, bird songs are invaluable tools used by bird watchers and nature enthusiast for locating and identifying birds, especially in dense forest and shrub vegetation. Moreover, acoustically, they provide a rich ambiance to forest and field habitats. Songs are typically long in length and range from simple trills to complex arrangements of notes and phrases. Given throughout the year, birds also use a variety of short one or two-noted calls such as predator warning alarms, ground and in-flight contact notes, family communication calls, pair-bonding calls and as distraction notes.

How do you learn bird songs? A combination of methods is typically used: (1) Listening to recordings of bird songs on CDs and tapes; (2) Comparing song patterns to short descriptive phrases such as 'trees, trees, murmuring trees' for the black-throated green warbler (presently migrating through Augusta); or (3) Using the help of simple succinct descriptive terms such as 'zee, zee, zee, zee, zee' (for the same species). Musical descriptions and descriptive sonograms are also used. Most people utilize a combination of all three. Generally, it takes a combination of hearing the birds 'in the wild', then confirming them using the recordings or written song descriptions, which are presented below. Watching the bird singing is one of the strongest learning tools and provides life-long memories of the event. This learning process is usually repeated many times for most songs.

The Sibley Field guide to the birds provides the most thorough written descriptions of most vocalization types for each species while the out of print Birds of North America by Chan Robbins provides useful sonograms of many species. The Stokes Field guide to the Bird Songs gives the highest quality recordings of both bird songs and call notes and each species has a separate track, making it more efficient to use. The Peterson's field guides Birding by Ear, Eastern/Central edition and More Birding by ear, Eastern/Central edition are the best training field guide because they group similar sounding species together and point out similarities and differences.

Descriptions of their breeding season songs and general call notes for the more common species are presented on the following pages. Swallows and other aerial feeders, owls, hawks, waterfowl, most woodpeckers and less common landbirds are not presented. Species are grouped by Field, Shrub and Forest-Edge nesting species and Forest and Woodland nesters as well as Open swampy nesting species along Piggery Rd (Yes, there is an old piggery nearby!), The forest and woodland species are organized by song types.

- Stokes Field guide to bird songs, Eastern Region by Lang Elliot
- Birding by ear, Eastern/Central Peterson Field Guide Series
- More Birding by ear, Eastern/Central Peterson Field Guide Series
- Wild sounds of the north woods by Lang Elliot –No longer in print used copies only.
- Bird Song Ear Training Guide by John Feith available at 1-800-432-8376 at a nature supply vendor 'One Good Tern'.
- Field Guide to Bird Songs, Eastern/Central Peterson Field Guide Series

Fields, shrub, and forest edges

American robin Their song pattern is distinctive: comprised of an 'up-and-down' pattern of phrases that rise and fall in pitch. Each phrase is separated by a short pause: 'cheerily' (up or higher pitched)'-'cheerily' (down) -'cheerily' (up) - 'cheerily' (down) or 'tea-da-leet' (up)-'tea-da-leet' (down) -'tea-da-leet' (up) -'tea-da-leet' (down), followed by a few second pause then repeated again. Alarm notes: a higher pitched series of 'tyeep' notes and lower pitched 'tut-tut-tut', a single 'tut' and a very high pitched extended alarm 'whine call'.

Found in most areas and habitats in the Arboretum, the American robin is a 'key' common species to learn well because, to the novice or beginning birder, many species have similar up-and-down patters within the same sound frequency range or pitch range. It is a species you can relate or compare many new songs to as encountered.

Chipping sparrow Sharp dry insect-like 'non-musical trill' of chip notes; like a sewing machine. Alarm note: a dry 'chip'. In mowed lawns and hayfields.

Song sparrow Song is 3-parted: opens with 2-3 notes 'sweet sweet' followed by a 'variable trill' then ending with a short trill-like set of notes (sometimes non trill-like). Alarm note: a sharp husky 'chup', 'tchunk' or 'jimp'. Flight call: a clear 'siiit'. Copulation call: a nasal, trilled 'ee-ee-ee' given by females. Common along shrubs and forest edge from early spring through late fall.

House wren Loud and bubbly. Opens with several short notes followed by an explosion of sputtering notes. Call notes a sharp 'chep' or 'cherr'.

American crow 'caw caw'; gives an assortment of other vocalizations; ubiquitous.

Common yellowthroat 'witchity - witchity - witchity - witch'. a bright rapid chant: sometimes 'witchy - witchy - witchy - witch'. Alarm note: a loud husky 'tchep'. Flight song: a high display flight where birds partially hover with legs dangling and tails pumping as they sing a series of jumbled notes concluding with several 'witchity - witchity' notes.

American goldfinch Song loud, musical with rapidly repeated phrases. Sometimes phrases resemble songs of rapid warbler songs but at a distinctive non-warbler 'goldfinch pitch' and cadence. Gives a distinctive Canary-like call note and flight notes that sound like 'potato chip' 'potato chip' 'potato chip' or 'tidee-di-di' 'tidee-di-di' 'tidee-di-di'. Heard throughout Arboretum.

Northern cardinal A strong sweet whistled 'what cheer cheer' or 'whort whort'. Call note a sharp metallic 'tik', also bubbly chatters.

Common grackle Song non-musical, harsh 'kh-sheee' or 'klu-rezzh'. Call notes a loud husky 'chuck' note that is raspy and squeaky.

Eastern bluebird Song 3 or 4 soft gurgling notes 'purity' 'purity' 'purity'. Call notes: a musical 'chur-wi' or 'tru-ly. Breeds in nest boxes in fields.

Eastern phoebe 'pho bee' or 'phe bree' well enunciated, given in pairs with the second note alternately higher or lower. Alarm notes: often repeated, a sharp 'chip'.

Eastern kingbird 'kit-kitter-kitter' and 'dzee-dzee'. Given as a rapid sputter of high bickering notes that sound like static electricity. Birds are aggressive edge nesting species in shrub-dominated habitats.

Mourning dove '<u>oooo</u> <u>wee-ah</u> <u>oooo</u> <u>oooo</u> <u>oooo</u> <u>ooo</u>'. A distinctive mournful whistle with an accent on the '<u>ah</u>' in the '<u>oooo</u> <u>wee-ah</u>' phrases.

Chestnut-sided warbler 'please please please pleased to meet' cha' or 'see see see see Miss er'. This song is 2-parted, comprised of 'please please see see see see Miss' followed by an accented or emphatic 'meet' then a dropping cha' or an even pitched 'see see see see Miss' followed by an accented or emphatic 'Beech er with the 'er' dropping at the end. Alarm note: a rich 'chip' similar to yellow warblers.

Yellow warbler 'sweet sweet I'm so sweet'. This song is 3-parted: 'sweet sweet', a short pause then an emphatic (accented) 'I'm so sweet'. Alarm note: a rich 'chip' similar to chestnut-sided warblers.

Pine siskin Song buzzy and rising, almost metallic 'toooeeo', reminiscent of the rising song of a northern parula. Flight call note: a raspy 'chit-chit'. Heard mostly flying over.

Nashville warbler 'see-bit see-bit see-bit titiititititiii'. Two parted trill; first part with three 2-notes followed by a longer faster trill: that sounds like a chipping sparrow's trill. Song sometimes given faster (caffeinated version) or 3-parted that suggests a Tennessee warbler's rapid 3-parted song. Alarm note: a sharp, metallic 'pink' or 'clink'.

Tufted titmouse Song a whistled 'peter peter peter peter'. Calls include a single drawn-out whistled 'peet' contact note that is given back-and-forth between pairs and scolding chatter notes: 'ti ti ti sii sii zhree zhree zhree'.

Gray Catbird A not-so-good mimic: Repeats songs and calls of other species and non-bird sounds one time: 'AA' 'BB' 'CC'. Cadence slower than the next two mimics. Call note a loud kitten-like 'meow' or 'mew' and 'a loud crackling 'kedekekek' when surprised.

Brown thrasher Good mimic: Repeats songs and calls of other species twice, pausing before moving onto the next: 'A'A AA' 'BB BB' 'CC CC'. Call notes variable: sharp 'chak' and 'tsssuk'; a rich low whistle 'peeooori' and a low 'chilir' growl.

Mockingbird Skillful mimic: repeats songs and calls of other species in series of three before moving onto the next: 'AA AA AA' 'BB BB BB' 'CC CC CC', sometimes repeating

20 or more songs, calls and non-bird sounds in succession. Call note a sharp blackbird-like 'chuck', but more drawn out.

Savannah sparrow Song a 3-parted buzzy trill. The first and third parts are short while the middle is long. Alarm note: a soft '*chip*'. Common in hayfields.

Bobolink 'Song a loud complex babbling series of long, complex notes varying in length and pitch', often given in flight: Call note: '*link*' like the end of its name.

European starling Song harsh rattling with some high thin short, sometimes sliding whistles and hisses, including mimicked parts of other species. Beware of early 'out-of-season' songs such as eastern pewees mimicked by starlings. Call note: a harsh chatter 'che che che che'. Competes with tree swallows for nest boxes.

Brown-headed cowbird Song with low bubbly or gurgling notes followed by thin slurred whistles given during courtship displays (while falling forward). Flight notes a high sharp whistled rising 'wheee-ti-ti' or 'tseeeee-teeea' followed by two lower notes'.

Killdeer Loud drawn-out 'Kill deer' 'Kill deer' 'kill deer'. 'Agitated call: a drawn out 'teeeee di di' Nervous call: a high rapid trill 'ttttttttttttt.'

Lincoln's sparrow A series of rich musical trills, 'ju-ju-ju dododod dididididi whrrrr', the last syllable rolling. Call note a loud 'tchip'. Flight note a rolling 'ziiiii'. Migrant only.

White-crowned sparrow "Song begins with clear whistles like white-throated then a series of buzzes or trills on different pitches". Alarm call a sharp 'pink'. May migrant.

Field and shrub dwelling trillers

Trillers sing rapidly repeated, simple 'chip' notes each without a pause. They are usually given at the same pitch. Species differ in speed of delivery, pitch, length of song and 'sound quality'. Habitat is an important clue to help guide identifications. For example, chipping sparrows are the most common triller in lawns and usually sing from low shrubs, whereas pine warblers breed in taller pine groves and usually sing from the upper canopy.

Chipping sparrow Sharp dry insect-like 'non-musical trill' of chip notes; like a sewing machine. Alarm note: dry "chip'. Seen in mowed lawns, usually singing from shrubs.

Pine warbler Song a short sweet trill heard from the tops of tall white pines Usually sing from high in the canopy and are difficult to detect from within the foliage.

Swamp sparrow Song like a chipping sparrow but slower, sweeter and stronger from start to finish. Alarm call: loud 'chimp', slightly nasal and forceful Sings from shrubs and grass clumps.

Open swampy areas along Piggery Street

Red-winged blackbird, Song a gurgling 'konk-la-reeee' or 'konk-la-dee'. Call notes a loud sharp 'chuck', a flight call low dry 'kek' or 'chek' and, a loud descending 'teeeew' given by males when disturbed.

Swamp sparrow Song like a chipping sparrow but slower, sweeter and stronger from start to finish. Alarm call: loud 'chimp', slightly nasal and forceful. Flight note a high buzzy 'ziiiii'. Usually found in emergent wetlands with and without shrubs.

Common yellowthroat 'witchity - witchity - witchity - witchity - witch'. a bright rapid chant: sometimes 'witchy - witchy - witchy - witch'. Alarm note: a loud husky 'tchep'. Flight song: a high display flight where birds partially hover with legs dangling and tails pumping as they sing a series of jumbled notes concluding with several 'witchity - witchity' phrases.

Alder flycatcher '<u>fee bee'o</u>'. Three-parted vocalization given 3-6 times a minute. Resembles an **Eastern phoebe** but dry, <u>even-pitched and non-musical</u>. Call notes: 'pip' or 'wit'. Phoebe gives a well enunciated '<u>phoe-be</u>' or '<u>fi-bree</u>' with the second note alternately higher or lower.

Virginia rail 'Song' a repeated series of sharp, rapid 2-noted 'kid-ick' notes, each followed by a short pause: 'kid-ick kid-ick kid-ick kid-ick kid-ick'. They sing from within the grasses making them difficult to detect.

Sora 'Song' A cool-sounding long high-squealing descending whinny: 'ko WEEeee-e-e-e, ee, ee', slowing down at the end (given by both sexes). In addition, gives a clear sharp whistled 'kooEE' an alarm note

American bittern 'Song' a pumping or gulping 'ump-a-lunk' 'ump-a-lunk' 'ump-a-lunk' or translated as 'bloonk-adonk bloonk-adonk bloonk-adonk'. Call notes when flushed: a rapid 'kok kok'. In flight it gives a loud nasal 'squark'. Usually heard calling form grass and sedge meadows, rather than seen.

Wilson's snipe Flight 'song' a descending series of mechanically produced 'notes' manufactured by air passing through modified wing feathers. Call notes a sharp, often repeated 'keck', given from within grasses and sedges.

Spotted sandpiper A series of repeated 'peet-weet' calls given when disturbed.

Forest and woodland species

Black-capped chickadee Whistled slow double 'phoe-bee' 'phoe-bee' phrases (short pause) then a phoe-beee. Common call note: 'chickadee dee dee' given rapidly in contrast to the slower gruff or slurred 'chick a dee' of a boreal chickadee. Contact note: 'See see' similar to golden-crown kinglet and brown creeper. Other calls include an alarm 'zee', a 'chit' note and a variety of 'gargled' calls.

Blue jay A harsh descending 'jaaaay'. Clear whistled 'toolili toolili'. Excellent mimics of red-shouldered and broad winged hawks when near the nest.

Red-breasted nuthatch 'yank yank' or 'neep neep neep'. Nasal, sounds like a 'tiny tin horn'. More higher pitched and nasal than white-breasted nuthatch.

White-breasted nuthatch 'whi whi whi whi whi whi or 'who who who who'. A series of low, rather nasal, whistled notes all on the same pitch. Call note is given throughout the year: a nasal 'yank' or 'hank', sometimes double-noted 'yank-yank' or 'tootoo'.

Common flicker Two main call types: a loud 'kew-kew-kew-KEW-KEW-KEW-KEW-Kew-kew-kew-kew' and a softer 'wicka wicka wicka', sometimes given up to 12 or more times and a Gives a down-slurred call note 'keeew' 'keee'.

Purple finch A distinctive musical flowing warble. Call note: a bold 'pict' given in flight. Often heard flying.

Winter wren A loud extremely long, rapid complex series of melodious trills, warbles and single notes. Alarm call: 'kupt-kupt' or 'chek chek', like a song sparrows.

House finch Like a purple finch but buzzier with a distinctive long slurred buzzy ending ('wheeerr'). Call note: 'queet'.

Warbling vireo Song described as 'when I see you, I will squeeze you' or 'If I could see you I would seize you and squeeze you till you squirt', with the 'squirt' being somewhat buzzy. Song somewhat like a short slow purple finch song. Call note a harsh, nasal 'swelling' 'meeezh'.

Forest birds with distinct phrases or notes

Black-throated green warbler Song is distinctive: 'trees trees murmuring trees' or 'zee zee zee zee zow zeet' and a second song type given more often in July sounds like 'zoooo zeee zow, zow zeet'. The 'zeet' and 'trees' phrase is given at the same pitch; while the 'zoooo' and 'murmuring' phrase drops in pitch. Call notes: a sharp 'chip' and a 'double chip', given while feeding young (Note that blackburnian warbler's give a single sharp 'chip' note while tending young).

White-throated sparrow Clearly whistled 'old Sam Peabody Peabody' (general description) and 'oh Canada Canada Canada' (north of the border). Each phrase is a distinct whistled note with the last three phrases are even in pitch. Alarm note: a loud metallic 'chink', often given in rapid succession. Flight call and contact notes: high even-pitched long 'seeeet.'

Ovenbird 'teacher teacher teacher, teacher' (up to 7 teachers). Emphatic, each phrase gets louder. Alarm note: a sharp husky 'chip'.

Nashville warbler 'see-bit see-bit see-bit titiititititiii'. Two parted trill; first part with three 2-notes followed by a longer faster trill: that sounds like a chipping sparrow's trill. Song sometimes given faster (caffeinated version) or is 3-parted that suggests a Tennessee warbler's rapid 3-parted song. Alarm note: a sharp, metallic 'pink' or 'clink'.

Blue-headed vireo (Solitary vireo in older field guides) Song with simple 2-noted ('seee-mee') and 3-noted ('here I ammm') slurred phrases given in an up and down pattern, similar to red-eyed vireo (next species below) but slower, sweeter, more deliberate and higher in pitch. Alarm note: long raspy and harsh 'gremlin-like' chatter, often repeated when near a nest or fledglings.

Red-eyed-vireo 'see-me', 'hear-me' 'hear I am or 'here I am' 'where are you' or 'here-lam' 'in the tree' 'look up' 'at the top'. The phrases rise and fall in pitch with a short pause between each phrase: 'see-me' (rising) 'hear-me' (falling) 'hear I am' (rising) then a longer pause followed by 'see-me' (rising) 'hear-me' (falling) 'here-I am') (rising), continues singing throughout much of the afternoon and sings into August. Alarm note: an agitated slurred 'weeer' or harshish 'veer', usually given when feeding or tending young.

Magnolia warbler 'weeta weeta weetsee' (last note rising) or 'weeta weeta weeta chew' or 'sweeter sweeter sweetest'. Similar to some accented song types of an American redstart. Can also be confused with short renditions of common yellowthroat songs and chestnut-sided warbler songs. Call note: females tending young or near nests give a unique 'tlep'...

American redstart Two song types: buzzy accented 'tsee tsee seee tzirr' with a down-slurred ending and 'tseeta tseeta tseeta tseet' with a softer unaccented ending. Gives many variations and can be easily confused with magnolia warblers. Call note: a clear sharp high-pitched 'chip'.

Black-throated blue warbler Song a husky lazy 'beer beer beer breee' (last syllable ending higher and accented), 'I am so laaz- or 'zur zur zur, zreee' (Again, ending higher and accented). May give a shorter version with similar accent on last syllable: 'beer, beer, breee' or 'zurr zreee', Alarm note: distinctive hard 'tek'.

Baltimore oriole Song whistled, bold and variable 'here, here, come right here deer'. Sometimes gives a 2-syllableb loud whistled 'hulee' note. Call note a dry rattle and flight note a robust 'veeet'.

Scarlet tanager Like a slow robin with a sore throat. Call note a distinct loud 'chio-burr' given several times a minute.

Rose-breasted grosbeak Sounds like a musical robin with a slow pace and lacking gurgling notes. Call note a distinctive loud sharp 'keck' or 'iik', like "sneakers (rubbing) on a gym floor".

High-pitched double 'weesee' or single 'seet' notes

Black-and-white warbler 'weesee weesee weesee weesee weesee', a thin series of high-pitched, 2-syllable notes given at the same frequency: A second more rambling 2-3 parted song given more frequently later in the breeding season weesee weesee weesee, weesee, weesee, dropping in pitch midway through the song then rises again in the 3-parted renditions. Alarm note: a very sharp 'pit'.

Bay-breasted warbler a slow '<u>tees teesi teesi</u>' or '<u>tees teesi teesi teesi</u>' (3-4 high pitched 2-sibilant phrases). Resembles the early season songs of black-and-white warblers but thinner, slower and shorter, more on one pitch. Alarm note: distinctive clear '*chip*'.

Cape May warbler 'seet seet seet seet' 3 to 5 similar even-pitched phrases. Song very high and thin, easily confused with the more quiet bay-breasted song, which is slightly lower in pitch with shorter breaks between notes. Infrequently gives an alternate trill-like song lacking distinct syllables comprised of rapid 'titititititititititi' notes. Alarm note: a very high, short 'ti'. Formerly more abundant, now occasional nester in tall spruce forests.

Golden-crowned kinglet Ascending quiet or soft 'see see see see see' followed by a short series of descending crackling notes, which are not always given. Call note: a soft high wiry 'see-see' similar to brown creeper's single 'seee' note and similar

to the '<u>see</u>' given by black-capped chickadees. Listen carefully because they often give a single faint 'seee' note.

Cedar waxwing Song a thin, high-pitched 'zeeee', often repeated.

Forest birds with complex songs

Blackburnian warbler 'zip zip zip ziptiti tseeee tseee'. Extremely variable song ending with very high up-slurred notes rising about 2-Kz in pitch (inaudible to some ears, especially those over 45 who listened to loud music or were hunters). Also a 2-parted rendition: 'teetsa teetsa teetsa followed by a rising zizizizizizi', or a shorter series of slowly rising phrases 'zillup zillup zillup Zizizizizi' (last phrase rising rapidly). Songs are highly variable but always end with an up-slurred note that reveals their identity. The coastal dialect is very musical and captivating. Alarm note: a sharp single 'chip'. Often at the very top of conifers, making them difficult to see.

Northern waterthrush 'sweet sweet sweet wee wee wee chewchew. 3-parted, loud and clear with accelerating staccato ending. Alarm note: a sharp 'chink' or 'chuck'.

Canada warbler A sharp 'chip' (followed by a short pause) 'chip chupety swee ditchety'. A staccato burst, irregularly arranged arising from a sharp 'chip'. Alarm note: a loud 'tchip' or 'chip'. World populations severely declining.

Ruby-crowned kinglet Song very loud and bugle-like starting with 3 or 4 high pitched 'tees', then several lower 'tews' and ending in a repetitious 'ti-dadee tidadee tidadee' chant. Another example: an ascending 'tee tee tee' (short pause) 'tew tew tew tew' (short pause) 'ti-dadee tidadee ti-dadee'. They frequently repeat the 'tew tew tew' phrase 8 to 10 times (sounds like they are stuck in gear) or repeats the 'ti-dadee' phrase many times. Alarm note: a sharp 'ji-dit', which may be repeated in rapid succession.

Brown creeper 'see-ti-wee-tu-wee' or 'see-see-see-ti-ti-see' or tsee-tuti-sedu-wee'.

3-parted song weak but notes clear with a short pause after the second part. 'see-ti'--'wee'-'tu-wee' Call note: a thin 'eeee' or 'seee', similar to the 'see-see-see' of the goldencrowned kinglet.

Winter wren A loud extremely long, rapid complex series of melodious trills, warbles and single notes. Alarm call: 'kupt-kupt' or 'chek chek', like a song sparrows.

Thrushes: Complex ethereal musical songs

Hermit thrush Song clear, ethereal and flutelike, somewhat mournful with 3 or 4 phrases given slowly at different pitches; first phrase is a long introductory even-pitched note. Described phonetically as 'oh, holy holy, ah, purity purity, eeh, sweetly sweetly'. Call note during the breeding season is a low nasal, up-slurred 'weeh' or vreeh', often given multiple times at several second intervals, especially when singing stops in late morning and again at dusk. Sometimes gives the first introductory note alone as a call note. Like all Maine thrushes, gives a high-pitched, faint extended alarm 'whine' call: Fall and winter call note: 'tuk-tuk-tuk', given from late summer through spring.

Wood thrush Song flute-like with guttural phrases; introductory 'eeohlay' note is shorter than hermit thrushes. Pitch of individual phrases variable, less ethereal than hermit thrush. Call note a distinctive rapid crackling 'pip-pip-pip-pip-pip'. May give a plaintive 'whew' note or a single 'quirt' or 'ert' note amidst 'pit pit' notes, plus the high pitched extended alarm 'whine call'.

Swainson 's thrush Song with ascending flute-like phrases, mystical and peaceful in character. Differs from hermit and wood thrushes by spiraling upward <u>and</u> lacking a distinctive introductory note. Call notes: a sharp 'whit', or 'whit-burrr' (two-noted), a soft whistled even-pitched 'peeer' or 'heep' or 'peep', (hollow 'peeep' or 'queep' note similar to a spring peeper), short 'bink' or 'plink' and the high pitched extended alarm 'whine call'.

Veery Song ethereal, spiraling or wheeling downward: 'da-vee-ur vee-ur vee-ur veer veer'. Song resonates as if singing into a hollow metal pipe. Call notes: a low sharp 'phew' or 'view'. Pairs and fledgling family groups often exchange low 'veer' notes.

Forest birds with simple distinctive 'songs'

Least flycatcher 'che-bek!' 'che-bek!' 'che-bek!' 'che-bek!'. A sharply snapped 'che-bek!' given in rapid succession. Note yellow-bellied flycatcher gives a single 'che-bek-like' vocalization, ('kilik'), which is given only once compared to the succession of 'che-beks!' given by least flycatchers. Call note: a series of garbled notes.

Yellow-bellied flycatcher Two 'song' types: a terse 'kilik' and a whistled 'chur-eee'. They typically give a single 'kilik', which resembles the emphatic 'che-bek!' call of the Least flycatcher, which are given as a rapid succession of sharp 'che-beks!'. Equal numbers of both call types are given, although birds may stick with one type during a singing session.

Olive-sided flycatcher Very distinctive 'quick three beers' 'quick three beers'. An easily recognized spirited whistle: middle note highest, last note sliding or elongate. Call note: a trebled 'pip pip' pause 'pip pip pip'. Typically found in forested habitats with open canopies with dead snags used as song perches.

Boreal chickadee A slow and gruff 'chick a dee' repeated infrequently. Call note: a short 'seee' or a single 'chip' note. Difficult to see, birds often remain hidden in the

upper and middle branches of spruce trees. Hear one and there are often four present. Not present at the Arboretum.

Eastern wood pewee 'pee-a-wee' 'pee-a-wee' 'per-ur'. Pleasing plaintive sweet whistled 'song', slurring down then up, given at a slow pace. 'per-ur' slurs downward.

Great-crested flycatcher A loud whistled 'wheep' 'wheep!' Also a loud rolling 'prrrreet!', often given in combination.

Common raven Low pitched non-musical grunts & higher pitched screams, human-like.

Forest trillers

Dark eyed junco 'Musical trill', often bell-like; mostly at one pitch and slower at end. Alarm note: distinctive hard 'tek' or 'stip'; Flight call: a sharp buzzy 'tweet'; Alarm note when flushed: high tingling chips 'tsititit tit'. Commonly detected by sharp call notes.

Northern parula (warbler) 'zeeeeeeeeeeeeeeeeeeeee.up'. Song a buzzy trill or rattle that ascends or climbs the scale then trips over at the top and immediately stops after the 'up'. A second song type ascends in short phrases before tripping over the top 'zee, zee, zee, up'. Call note: strong clear 'chip'.

Yellow-rumped warbler Song a slow trill or slow variable warble usually 2-parted with a longer lazy trill followed by a short trill that either rises or drops in pitch. The slow cadence gives the impression of a 'lazy song' when compared to warblers like the Nashville, northern parula or blackburnian. Alarm note: a loud 'check' or a sharp 'chep', repeated often.

Palm warbler Song a variable trill slightly changing in pitch, Often buzzy, somewhat musical and can be a slow or fast trill of weak repetitions notes. Alarm note: a sharp 'check' given frequently. Very common in open bogs in Washington and Hancock Counties and in northern Maine.

Wilson's warbler 'chee chee chee chee chee chee cheechee'. Song a fast chattery trill, accelerating at the end. Alarm note: a loud 'chip'.

White-winged crossbill Calls are sharp, chattering 'plik' or deeper 'tyoop', repeated 3-7 times. Song a melodious trill.

Red crossbill Common call: 'jit' repeated 2-5 times; song complex.