

INTRODUCTION

I DON'T LIKE TEXT

Personally, I soon get very bored with the introductory sections of any book. My guess is that many of you feel the same way. But this book is quite different from any that you have used before, so please, please do read on to get a clearer understanding of its overall design and how you might get the most from it.

THE PAST

The past is important because invariably it shapes who we are and how we think.

I grew up in England. I started collecting eggs when I was 7 and was introduced to birding, as so many people are, by an early mentor, my schoolteacher Mr. Sutton, when I was 10. I tried to identify everything I saw from then on. I started chasing ('twitching') rare birds at 16 and became an obsessed and obsessive birder when I went to university. I hitchhiked over 100,000 miles in 3 years looking at birds (perhaps I should have been listening to lecturers!). More importantly, during this time I became part of an incredible British birding culture. Its influence on the way I think about birds and birding—and of course my lifestyle—can't be underestimated.

I first came to America—and Cape May—when I was 21. I loved it so much that I moved here for good in 1991. My experiences in learning a new avifauna have also greatly influenced my thinking. And, thrown into the mix, has been a lot of travel much farther afield, including living in Japan for nearly 2 years. I have tried to draw from this rich and varied experience to produce the book.

THE PRESENT

Birding knowledge has evolved greatly over the last 40 years, but the basics of field identification have remained the same. Photography, however, has changed beyond all recognition. The digital age has revolutionized and popularized bird photography. For one person to make a comprehensive book using over 10,000 images and covering 660 species would have been almost unthinkable until recent times. And as digital cameras continue to improve at a dizzying pace, more birders are becoming confident and proficient photographers, thereby accelerating the trend for more photo-based guides. But, until now, these guides have essentially followed the same 'static' formula as artwork-illustrated books, that is to say they concentrate on individual images isolated from the overall context of habitat—and other birds. *The Crossley ID Guide* changes this approach in a fundamental way.

HOW TO USE THIS BOOK

ORGANIZATION

The first thing about this book that may strike you as different is its organization. Traditional field guides largely use a taxonomic sequence, which, while aiming at scientific accuracy, doesn't always make sense in field birding. It also changes, literally from day to day, making it hard to keep any guide current. This book splits the species into 8 groups, based on habitat and physical similarities. It is no coincidence that a bird's appearance is largely influenced by its environment. It also means that taxonomic order is not broken as often as you might think. Similar-looking species are grouped together so they can be compared easily.

Unfortunately, the largest downfall of all books is the impossibility of portraying size in a lifelike manner. The closest we can come to this is to write down the bird's length, which is included in each species account next to its name. The other is to show its size relative to other species. Because of the importance of this I have done it in 2 places in this guide.

Firstly, the front inside cover has representative species from most families that cover the complete range of birds in this book. For the beginner, this is a good place to start, and it is where you can narrow your search for any bird you are trying to identify.

Immediately preceding this introduction are 16 pages that feature all regularly occurring species, those that don't have a very restricted range. Like the birds on the front inside cover, these have been carefully measured. This is the best place in the book to make direct size comparisons. These pages should also be used to study shape, and, to a smaller degree, patterns of color. In most cases, a species will be identifiable from these plates. Included under the species image is its name in shorthand (alpha code) and its page number. It is on this page that you will find the species plate, the textual account, and the range map.

PLATES

The plates are intended to be the heart and soul of this book. Throughout I have strived to use images that I think represent accurately what each species looks like in the field, or put another way, as I would have painted them. They were chosen because they accurately portray the species' shape, plumage, and behavior. One of the beauties of these plates is that you can control your canvas and include lots more (lifelike) information than is possible with painted plates. These images were 'molded,' often after a considerable period of trial and error, to create an overall scene that is as lifelike as a printed image will allow. Each plate contains a massive amount of identification information within a relatively small area.

Here's the rationale for this approach:

1) *Reality Birding!* One of the most important things to learn in becoming a good field birder is the ability to see the features that remain constant, regardless of distance. By creating depth in the plates, we can see how a bird's appearance changes with distance.

Books typically only show birds close up and in detail. Yet in reality we very rarely see them like this. The plates in this book allow you to study distant birds and compare them to larger images. Seeing the similarities between the different-sized images will help you focus on the features that remain constant.

2) Why didn't I caption or give you all the answers to the identity of the birds in the background? *Because the answers lie in the larger captioned images.*

The book is designed to be interactive. Use these captioned birds in the foreground to try to work out the age and sex of birds in the background. This won't be possible for some birds, but for most it will. At school and in other walks of life, it is not until you practice or get your hands dirty that you really learn. Give it a really good bash! Most people are pleasantly surprised when they make a prolonged effort. If you can't do it here, you will find it very difficult with moving birds. If you can, work out many of the answers yourself. You will be far better prepared for the real world.

This is the first guide that uses lifelike scenes. Take advantage of them to practice so that you are better prepared to identify any bird you see in the field. *Practice makes perfect!*

3) *A picture says 1000 words!* And these plates contain many pictures. The amount of information in these plates is staggering. It is up to you to take advantage of this.

4) It's much easier for the human brain to absorb information from a single image than from many separate images. We are more likely to create a mental picture that we retain. I still remember some images from the first bird book I got as a kid!

The plates are mostly 'in focus' throughout their full depth, unlike other photographic bird guides. This is how most of us perceive the world we see (with the aid of contact lenses or glasses as necessary). We therefore relate naturally to this representational approach because we are most familiar with it—and so we will learn more.

5) All or most plumages are shown. Also included are birds in transition (molting). Many books show birds in breeding and nonbreeding plumage. It typically takes weeks, sometimes months, and occasionally years, for a bird to molt the feathers that change its appearance from one plumage to the next. By showing a more complete picture it is easier to visualize and understand the workings of molt and how it affects appearance. This expanded coverage also gives you a better chance to find a comparable image of the bird you are trying to identify in the field.

6) Behavior is a broad topic yet vital to many aspects of bird identification. Many examples of behavior are included in the plates. All actions and movements shown, such as

feeding behavior or unusual poses, are typical for that species. Birds that occur commonly in flocks are usually depicted in this way.

7) There are flight photos for most species; many have multiple images. Please look at these closely as they were extremely challenging to take and almost certainly account for my hair loss over the past few years! You will naturally ask: "Why so many flight shots?" Well, we see birds in flight more than in any other pose. Birds in flight can be relatively easy to identify, but it does require specific focus on size and shape. A bird's structure on terra firma is mirrored in flight.

8) Habitat plays a large role in identification. The plates capture a habitat or environment that is typical for that species. This is sometimes difficult because birds often live in a variety of habitats, and many species breed in very different habitats from those they occupy during the nonbreeding season.

9) Species get proportional representation, i.e., the common and/or more widespread species typically get full-page coverage. These species are treated more thoroughly, using additional images and greater variation in image size. Half-page plates are typically used for scarce and more localized species. Species that get only a quarter of a page are rare and are very unlikely to be seen. If you think you have found one of these rarities, look very closely and carefully, then let others know so that you can attain 'hero' status (or not!).

The secret to becoming a better birder (and finding rarities) is knowing how to look at birds, and *to gain an intimate knowledge of common species*. When you know what something isn't (a common bird), it's usually fairly easy to work out what it is (a rare bird!).

10) WWW.CROSSLEYBIRDS.COM will have expanded captions for many of these plates. With limited room for text, and a topic that is constantly changing, this provides the opportunity for me to include additional identification information.

HOW DO I LEARN FROM ALL THIS?

Hopefully, many readers will like the appearance of these plates; others will at first find them overpowering, and perhaps even confusing.

Yes, I could have made them simpler and perhaps more attractive. However, I didn't want to compromise my effort to get people to understand the 'big picture' of bird identification. And, yes, I am asking readers to think of, and use, this book differently from any other guide they may have. There are many different types of guides, but they bear no resemblance to *The Crossley ID Guide* either in their appearance or goals. Although this book will be used for reference, the principal reason for its design is to be interactive with the reader—much like a workbook at school.

When looking at a plate for the first time, try to view it without any preconceived ideas—just an open mind. Simply ask yourself: "What do I see?" Be careful that you do not look at it based on any preconceived notions of "What

am I supposed to see." In particular, look at the smaller images in the background, because the chances are that this is what you will actually see in real life. By zooming in and out of the bird images, try to absorb the things that remain constant—shape, patterns of color, and so forth. If you can create a good mental image of these patterns, it will serve you well in the field.

As you look at the plates try to get a feel for this bird, its lifestyle, where it lives, and what it does. In this sense, how you view it should be no different from how people view each other. If you are not interested in getting so involved in honing your skills, see if you can find every bird in the plate. Many are not so easy to locate. Just as in real life, the harder you look, the more you will see.

Keep in mind the points discussed throughout the 'How to Use this Book' section. Moreover, the plates contain a lot more visual information than has been shown in other guides to date. If you can remember details about the plate after you close the book, you almost certainly learned much more than you might think. Please remember, the best field birders keep it simple, so if you can look at a plate and create a picture in your mind of the bird involved, you will begin to think like an expert.

CAPTIONS, TEXT, AND MAPS

Captions, text, and maps are intended to complement the plates, and fill in pieces of information, some of which can't be shown visually.

Below each plate is the species' *common (English) and scientific name*. Nearly all of these follow the names used by the American Ornithologists' Union (AOU). Please remember these can change. Also, different bodies and countries use different common names. Most are similar, but some are significantly different; for example, Common Loon is usually called Great Northern Diver in Europe. If in doubt, you can cross-reference the scientific name. Taxonomy today seems to be in a greater state of flux than ever before, so scientific names, like common names, may change.

Next to the scientific name is an *alpha code*. This is the 'shorthand' used by banders for recording data. I have used this shorthand in the text for 2 reasons. The first is a space issue. Birds' names are often long and take up a lot of space at the expense of text. The second reason is that alpha codes are already part of many birders' lives. For example, there are several regional 'texted' bird alerts, such as where I live in NJ, that use this shorthand. If you are having problems understanding what the 4-letter abbreviation stands for within a species account, it usually refers to one of the comparative species found on an adjacent page. If not, there is an index at the back of the book (p.518) with a full listing. Typically, single-name species use the first 4 letters Killdeer (KILL), double-name species 2 and 2 (Blue Jay is BLJA), triple-name species 1, 1, and 2 (Great Blue Heron is GBHE).

The *average length* of the species depicted is shown next to the alpha code. Length is measured from tail tip to bill tip on stretched birds. When there is a large difference in size between sexes, as in many raptors, measurements for both are shown.

This book covers eastern North America (USA and Canada). A map showing the area covered by this guide and a key to colors used in the maps is on the inside back cover. Distribution plays a major role in bird identification. Use the maps to check where a species typically occurs. While it is not impossible to find a Black-capped Chickadee well south of its normal range, you will naturally be in the backyard of a Carolina Chickadee. While range may help you to make a positive identification, still study the bird carefully. By looking at where a species breeds you will have a good sense of which migration route it takes. Birds with a wide range can be assumed to migrate on a broad path unless specifically noted otherwise. Relative abundance is discussed in the text.

Maps are sized to maximize information. In many cases the map includes the West (western North America) to give a clearer, bigger, picture of the species' distribution, particularly as a large number of birds that migrate through our region originate in the West. Specific regions, such as the East, the West, the South, are capitalized in the text. When I use the abbreviation 'w,' I am referring to the western part of our region, i.e., the Great Plains.

Rare species get a written description of distribution because maps are typically of limited value for these.

On most plates, each plumage, age, and sex is labeled once. A label placed between 2 or more images implies it's applicable to both or all. On some plates, where all plumages are similar, for example Barred Owl, there is no label. In these cases, the birds are considered impossible or very difficult to age or sex in the field under usual conditions.

On some plates you will see captions that represent 2 or more plumages, for example 1st-s. male/ad. female. This means this plumage is representative of both plumages. In some cases, it is possible to age and sex the bird from the photograph, but I may not have done so on the plate. This is going to be a bone of contention for some. The reason is that, in many cases, such birds in the field cannot be aged or sexed with certainty all of the time.

One of the benefits of artwork is you can be purposefully ambiguous in such cases and not get flak for it. Where my approach may be particularly controversial will be with labeling of many ducks as 'eclipse/imm male.' Ageing these birds is difficult and still developing. Yes, they are different, but the differences are often subtle and usually too difficult for all but the very best birders to determine. Where they are easier to work out, I have labeled them accordingly. This is a judgment call—not the only one in this book! Trying to cater to a very broad audience (in the case of this book, everyone), and give detailed information on such a huge topic in such a small space is not without its difficulties. This is a major reason for having a website (WWW.CROSSLEY-BIRDS.COM), which will have expanded captions for those who really want to get in at the deep end.

Identifying birds is fun and rewarding. Trying to age and sex all the birds you see is just an extension of basic identification and can be equally enjoyable. As mentioned earlier in the introduction, try to use the larger captioned images to age and sex the smaller birds farther away. If you look closely, and carefully, you will find it's often not so difficult.

The clues always lie in the larger images. Using this simple approach, you will be training yourself to analyze and identify the birds you see in the field faster and in enhanced detail. In school we learned by working out the answer on our own. If we are given the answers, as in all the other guides, it is very hard to improve. After all, when we are in the field it is rare, and not particularly rewarding, when we have someone there to spoon-feed us. And, as my kids would tell you, one of my favorite sayings is “Practice makes perfect.”

When you read the text, it will hopefully reinforce and enhance all you have learned from the plate. It starts with the bird's status (relative abundance) and preferred habitat. Knowing where a bird lives plays a significant role in successful bird identification.

The text then discusses behavior. Just like humans, birds tend to behave in a certain way. We can invariably identify loved ones by the way they move, by particular mannerisms or quirks they have, or by the places they tend to visit. But just like in humans, it sometimes takes time to learn these. Obviously, the more time you spend around people or birds, the better you get to know them. Try to read the text and get a sense of the bird, what it is likely to be doing and how it will do it. Cross-reference your mental image with the plate. *Get to know the bird inside out!*

Within the **'ID'** section all the important field marks of that species are mentioned, starting with reference to size and shape. From there the text moves to other features that are constant in all plumages. More specific details on the characteristics that enable you to recognize each plumage are then discussed. These field marks not only help you identify the bird to species but also age and sex it. These can be considered the same as captions pointing to specific field marks on plates in traditional field guides.

Hopefully you will have already noticed many of these field marks if you have looked at the plate carefully! If you have, you will be sure to remember them in the field. If not, again cross-reference the plates. Take your time and go one point at a time. For very similar species, the text will tell you the features to focus on.

Try not to rush to read the text, but when you do, always do it slowly and with reference to the plates.

HOW TO BE A BETTER BIRDER

42 million people consider themselves to be bird-watchers in the USA alone. Most do not subscribe to birding magazines, read birding articles on the internet, or hang out with experts. If you are one of the many who are not familiar with the fundamentals of becoming a better field birder, the following is included in the hope that it will help you.

LOOKING VERSUS SEEING

The biggest mistake most birders make is to rush to get to a name rather than learn the species; how it behaves and what it looks like. *We often look rather than see!*

Do you know what a Blue Jay looks like? Really? Describe its tail. Is it black or blue, or a combination of the two? Is there white in the tail? How do you age the bird? What is its head pattern, and where is the black-and-white barring on the wing?

Okay, you get my point. And don't worry, there are probably only a few artists and bird banders who could answer all those questions correctly so you are in good company.

LEARNING TO LOOK: TAKING FIELD NOTES

Birding, as with most things in life, is about the basics. In this case it's learning to look. We can be told how to learn, but ultimately it's down to us to make it happen. The best field birders in the world, at some point in their lives, were made to look at birds closely, a crucial step in their (self-) training. I believe that all experts have taken detailed field notes, which is simply the best foundation for becoming a good or great field birder. Leading field trips, being a bird artist, or writing books also forces you to look at birds in this concentrated fashion. Only when you are put on the spot do you realize how little information you are really taking in, and this realization compels you to look much more critically at every detail of a bird's plumage and behavior. For those of you who do take field notes, you already understand the value of this as an habitual exercise; you are able to fill in pieces of the identification puzzle more accurately. In this way, you have already become a better field birder.

Funnily enough, I grew up in a British birding culture where you didn't take a guide into the field—only a notebook. You focused on the bird and wrote notes. This was the 'law,' and, if you wanted to be taken seriously as a birder, you simply didn't carry a guide. This fundamental difference in approach certainly affected how I look at birds today. And I'm genuinely thankful for it. Of course, in the end, this is an entirely personal choice for all birders, but I would urge you to give it a shot.

Taking field notes also makes you think for yourself—to *look at a bird for what it is rather than what someone else tells you it is supposed to be.* We are all influenced or biased by the world around us and the things we have read or heard. Remember, the bird in front of you is your immediate reality. Watch it and you will learn it. *Believe your own eyes!* You will understand the bird in a way that books cannot teach you. And remember, a bird's size, shape, and behavior

usually do not vary too much from individual to individual, even though the plumage may. The same is true of humans. We change clothes seasonally, but underneath we remain the same.

The following may prove useful:

Take 1: My name is Richard, I am white, pink-cheeked (though my cheeks get a lot rosier after exercise or booze). My complexion is paler in winter and darker after I spend time in the summer sun. My 'derriere' is white because it never sees the sun. I have brown hair and I'm not very tall.

Is this a good description and would you be able to recognize me based on it? The answer is obviously "No."

Take 2: My name is Richard. I am about 5 feet 9 inches tall. I weigh around 185lbs—I could do to lose a couple, though I am fairly broad. I am in my 40s, Caucasian, with short brown hair. You can often find me birding or photographing birds in Cape May.

Is this a better description? The answer is clearly "Yes," simply because it gives more specific information about my size, shape, and other physical attributes, as well as habits. You would probably use a similar approach to provide a decent description of yourself.

Now, a tough question. Do you know what a Northern Cardinal looks like? If so, please get a piece of paper and write down a full description (without recourse to a field guide). Or at least describe it in your head. Let's look at your description of the Cardinal. Was your mental image based on size, shape, and behavior as well as color? Probably not. But if you start to recognize birds as we do people, then you will be using the same set of skills as the best field birders in the world.

I firmly believe field identification of birds can be broken down into these key areas (in my personal order of importance): *size, shape, behavior, probability, color, and sound.*

SIZE

Somewhat surprisingly, perhaps, it turns out that we're remarkably good at judging an individual's height, in fact to within a 2% degree of accuracy on most occasions. The truth is that we spend most of our lives practicing. So, not surprisingly, adults tend to be much better at judging height than children. We all judge relative size in birds to some degree, but often put little emphasis on this in the field. You should always focus on size and try to make as accurate an assessment of this feature as you can. Compare the bird you're trying to identify with other nearby birds that you have already identified. With practice, you can become accomplished at determining size, which is critical since it is the least variable character that birds possess. Sometimes you will know you are very accurate with your assessment of size, but at other times it will only be a rough estimate. Naturally we can also get this wrong, particularly when views are brief or distant. *The secret is to know your limits.*

STRUCTURE AND SHAPE

Along with size, structure and shape are fundamental to the identification of nearly all birds. Shape is remarkably consistent in individual species. Color and lighting have little or no effect in our determination of a bird's shape and structure. Always try to describe a bird's shape in language that makes sense to you. We each interpret or understand words such as fat, rounded, slim, and long differently. While, as an author, I'm compelled to use these terms when describing a bird, you should create your own language and sense of scale to describe the same bird in terms that resonate with you.

BEHAVIOR

Learning the 'personality' of a bird is hugely important. This obviously takes longer to master than assessing a bird's size and shape. Knowing the behavior of birds with which we are familiar is essential in the field. Behavior encompasses many aspects of identification, just as it does with our interrelationship with other humans. For instance, consider the type of habitat a species favors, how it moves, and whether it's a loner or gregarious. For example, a Sanderling is instantly recognizable when it relentlessly chases waves along the beach, a clinching identification feature regardless of color or shape.

PROBABILITY

We use probability in bird identification, sometimes more than we would credit. Does the bird usually or always occur in this location and in this habitat? When you go birding in an unfamiliar area, you always start with this basic question, consciously or subconsciously. On your local patch you would naturally be more confident since you have built up experience of species' occurrence and distribution. For instance, if you come from Massachusetts and find yourself birding on the Delaware River in New Jersey, you need to ask yourself: "Is it Carolina or Black-capped Chickadee I'm likely to see here?"

I estimate that I identify approximately 90% of the birds I see as silhouettes or simple black-and-white images—a flock of European Starlings swirling around, a Cooper's Hawk chasing a Mourning Dove, a Northern Cardinal darting across a road, and a huge, dense flock of hirundines that will almost certainly be Tree Swallows. These are almost subconscious, reflex identifications built on years of careful field observation, and a just reward for learning to look.

COLOR

We love the myriad color of birds, and stunning photographs that capture them in all their astonishing beauty. Often we can't help but be overwhelmed by a blast of color as we chance upon a stunning red-and-black Scarlet Tanager. The problem is that Scarlet Tanager (a bird that is consistent in size, shape, and behavior, and also spends most of its life in uniform habitat) changes its colors. In one season it is usually yellow, green, and black; but it has to change its feathers (molt), and so it has a period when it shows a complex combination of different feathers and therefore a changing

pattern of colors. I won't dwell on the challenge of learning plumages of females, juveniles, 1-year-old males, and so forth! And there are other important factors that influence identification such as time of day, whether sunny or cloudy, position of the sun, amount of shade, feather wear and fading, aberrant (abnormal) plumage, and of course just normal variation between individuals within the same species.

Of course, we are naturally attracted by color. Even so, always try to stick to identification basics: "Is the bird in front of me the correct size and shape for the species I believe it to be?" "Does the species I've identified even occur here?" Color can be extremely variable, so it is important to focus less on the tone of the color itself and more on the overall pattern it creates, i.e., the relative colors of different parts of the body. For example, the shades of yellow in a Yellow Warbler are variable from bird to bird, but the lightest and darkest parts on each and every bird are remarkably consistent.

Ultimately, color is undeniably important in bird identification, and for beginners, in particular, it will almost always be the first feature to attract the eye. But the secret is to learn how to use color in combination with all of the other identification factors described above, and to always remember that most misidentifications are made because of a reliance on color as the key to successful field identification.

I have included some basic references to sound in this book but not for all species. The value of written descriptions of bird songs and calls has been debated for a long time. Without being able to listen to these vocalizations, descriptions are of limited use. I initially intended to exclude all descriptions of vocalizations but have found myself including more and more. I have questioned the wisdom of this more than any other aspect in this book. These descriptions can never compete with recordings on an iPod, phone, or the internet, where listening to any sound you want is nothing more than a couple of clicks away. However, even this does

not compare to the real thing in the field.

A quick test! Identify every bird in the photo below. At first glance many of you might think this blur of birds is impossible to work out without lots more fine detail. Please look again, and think in terms of size and shape. When considering color, think in terms of patterns—which part of the bird is dark or bright and which parts dull or pale? Look again and see if you can put all the birds into 3 groups.

The birds (about 20) in the foreground with the short red legs, fat body, chisel-like bills, and bold color patterns are Ruddy Turnstones. Center left is a slightly larger bird with a longer but thinner bill, an orange face, and contrastingly gray spangled upperparts—Red Knot. The 2 birds slightly closer to the left have the same gray spangled upperparts, and you can just make out the orange face—therefore also Red Knot. Just behind the clearest Red Knot is another bird with an orange-red head, but the orange is more uniform and extends onto the upperparts—it also looks smaller. This is a Sanderling. This pattern appears to be the same for all the birds in the background and, yes, they are also Sanderling.

At first this may seem tough, but try to remember it is the pattern of color and where it is brightest and darkest on the body that is most important.

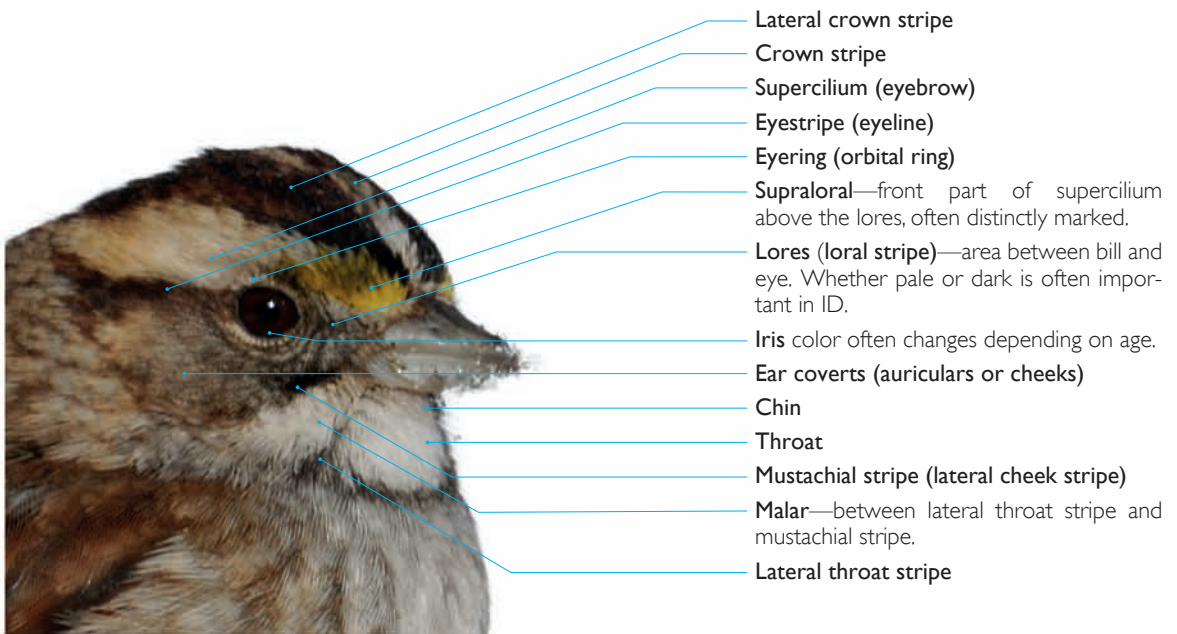
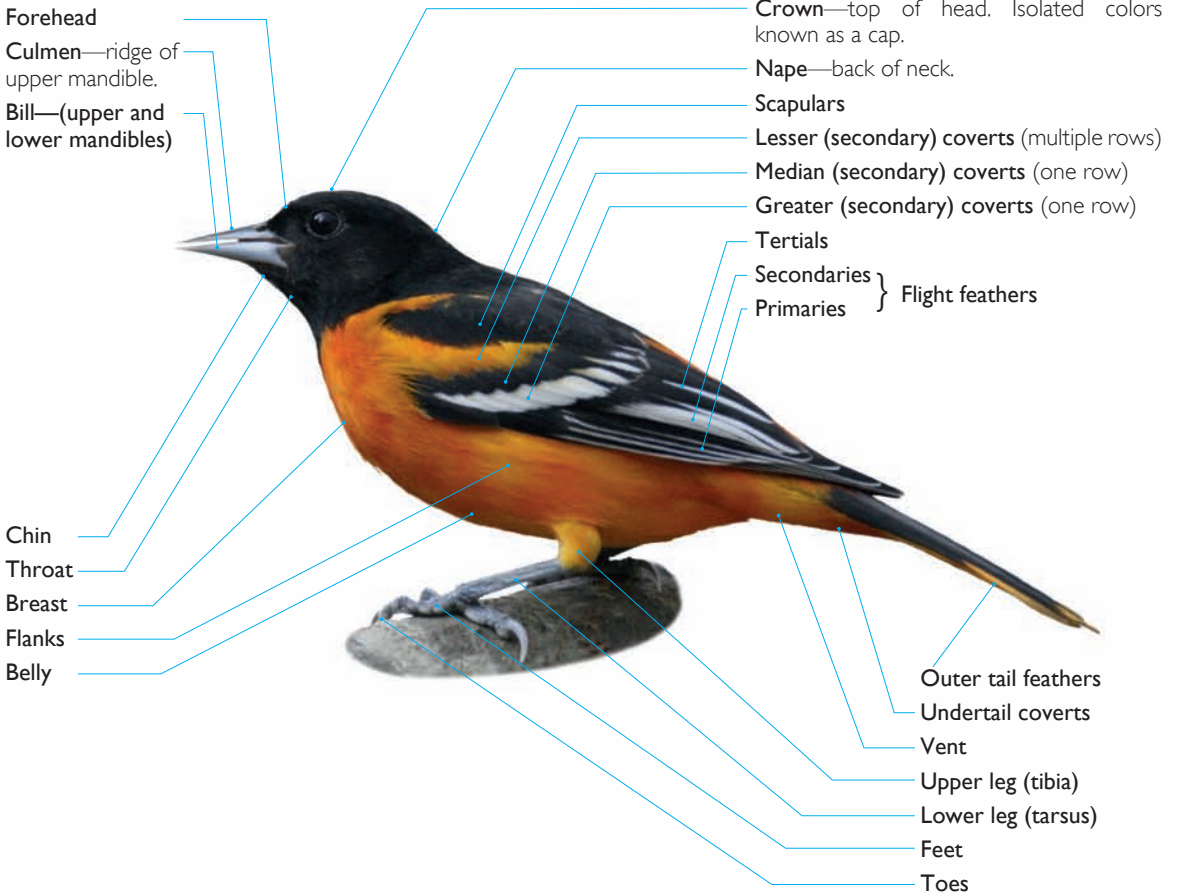
VOCALIZATIONS

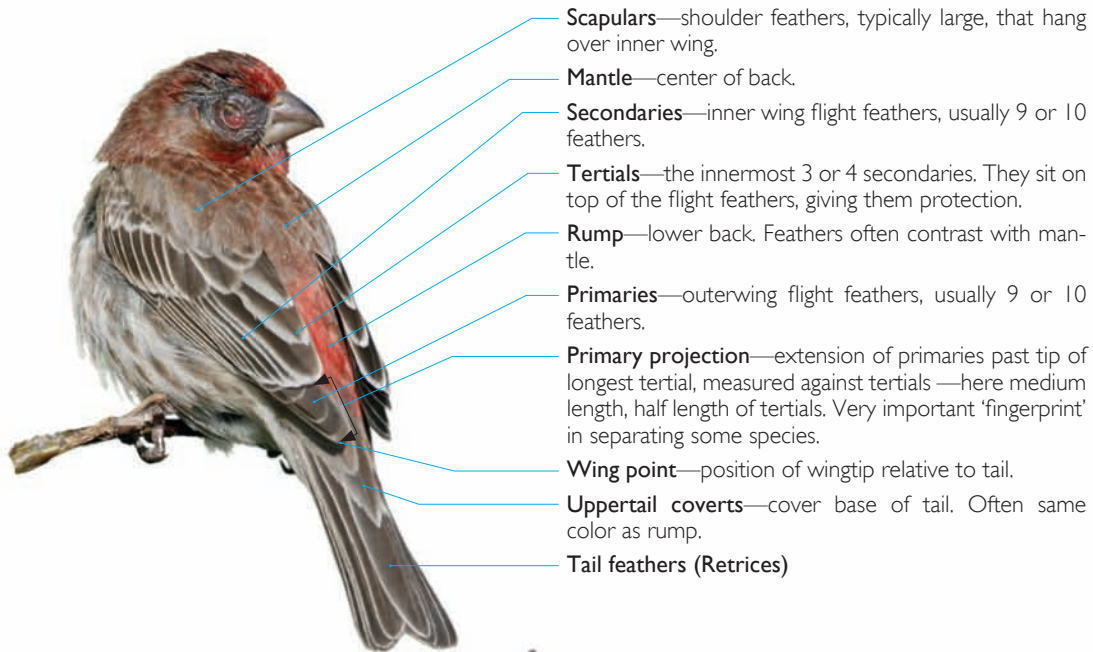
Songs and calls are a large part of bird identification. Many birds are identified without even being seen. Even if you hear a sound you are not familiar with, it helps you locate a bird that you might not have known was there. For the beginner, or someone starting from scratch, such as myself when I first came to North America, the range of vocalizations can seem overwhelming. I will always remember trying to differentiate all the songs in the spring dawn chorus for a bird race. It is much easier for me now but still a challenge.



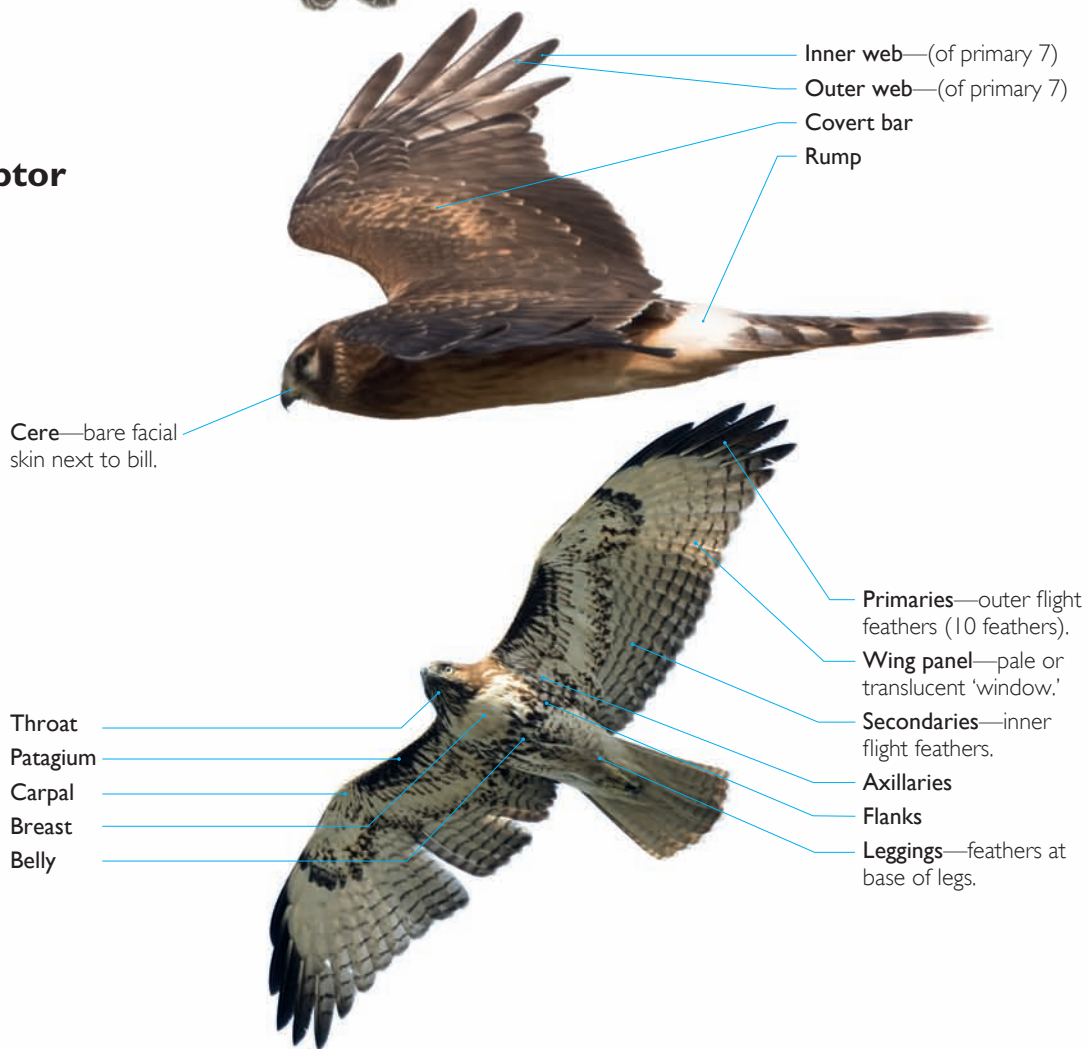
BIRD TOPOGRAPHY

Songbird

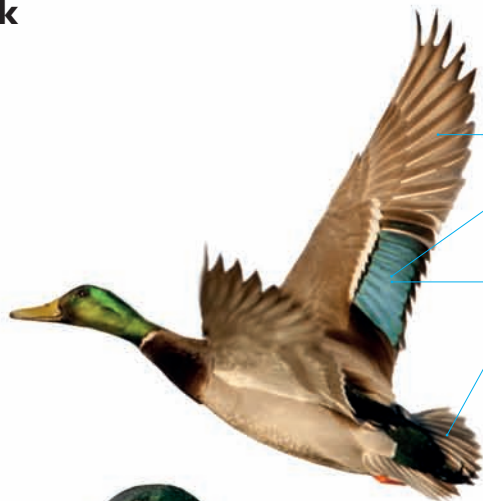




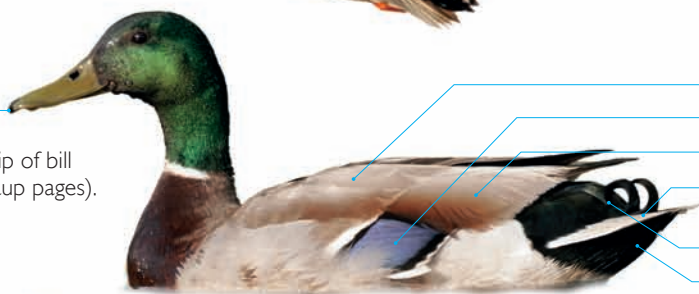
Raptor



Duck



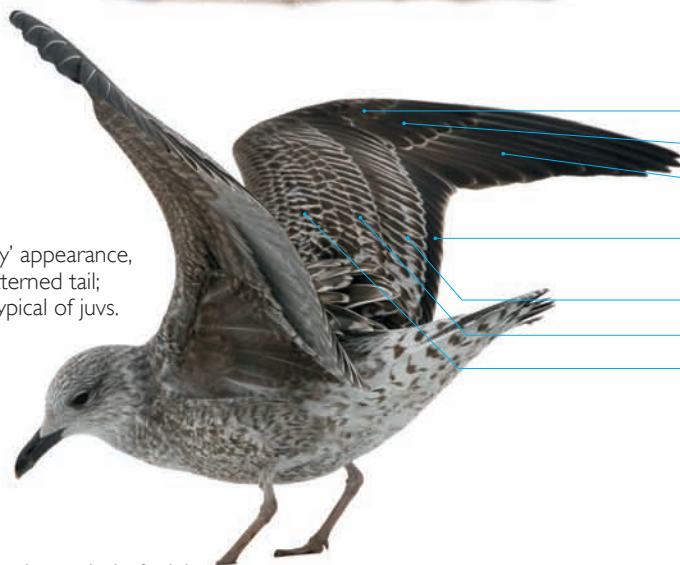
- Primaries**—usually 10. Numbered from outermost (primary 10) to innermost (primary 1).
- Secondaries**—usually about 9 feathers plus 3 or 4 tertials. The number of feathers varies among species.
- Speculum**—brightly colored patch on secondaries.
- Tail**—color often important in ID. Feather shape used in ageing.



Nail—tip of bill (see scaup pages).

- Scapulars**
- Speculum**
- Tertials**
- Tail**—color important in ID. Feather shape used in ageing.
- Uppertail coverts**
- Undertail coverts**

Gull



Neat 'scaly' appearance, boldly patterned tail; features typical of juvs.

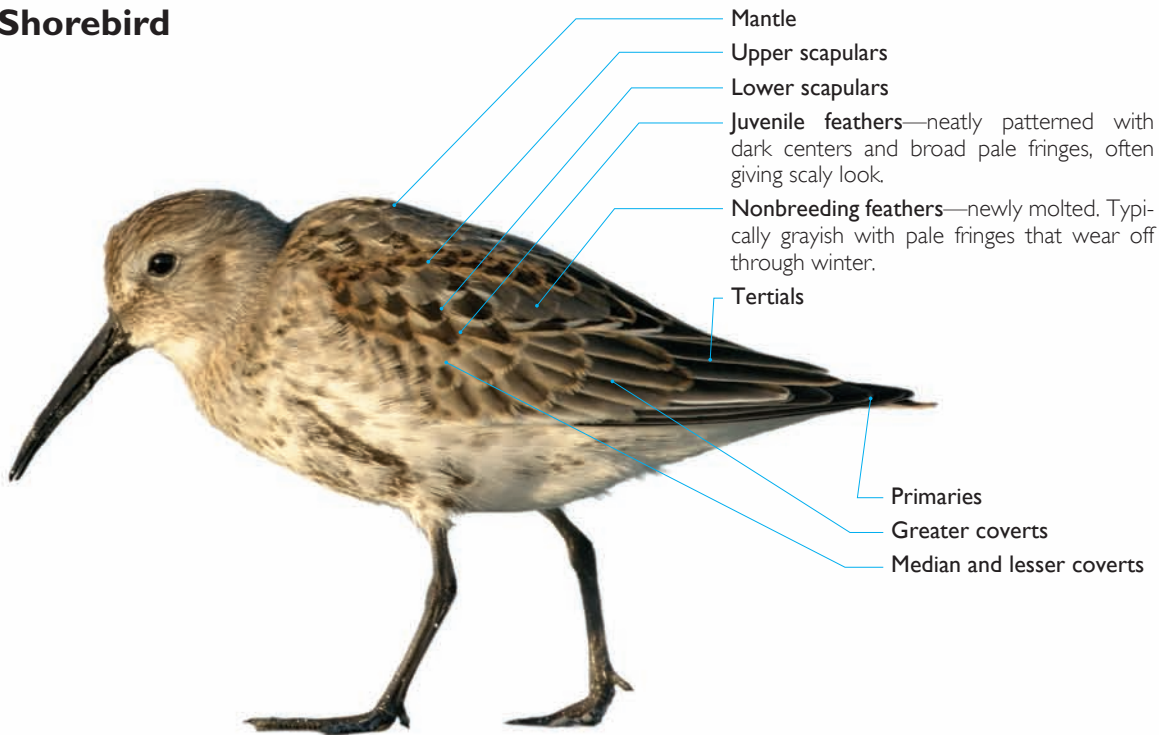
- Alula**
- Greater primary coverts**
- Primaries**—division with secondaries often clear-cut.
- Secondaries**—often show as dark trailing edge.
- Greater coverts**
- Median coverts**
- Leasser coverts**

Uniform back—typical of adult or near adult gulls

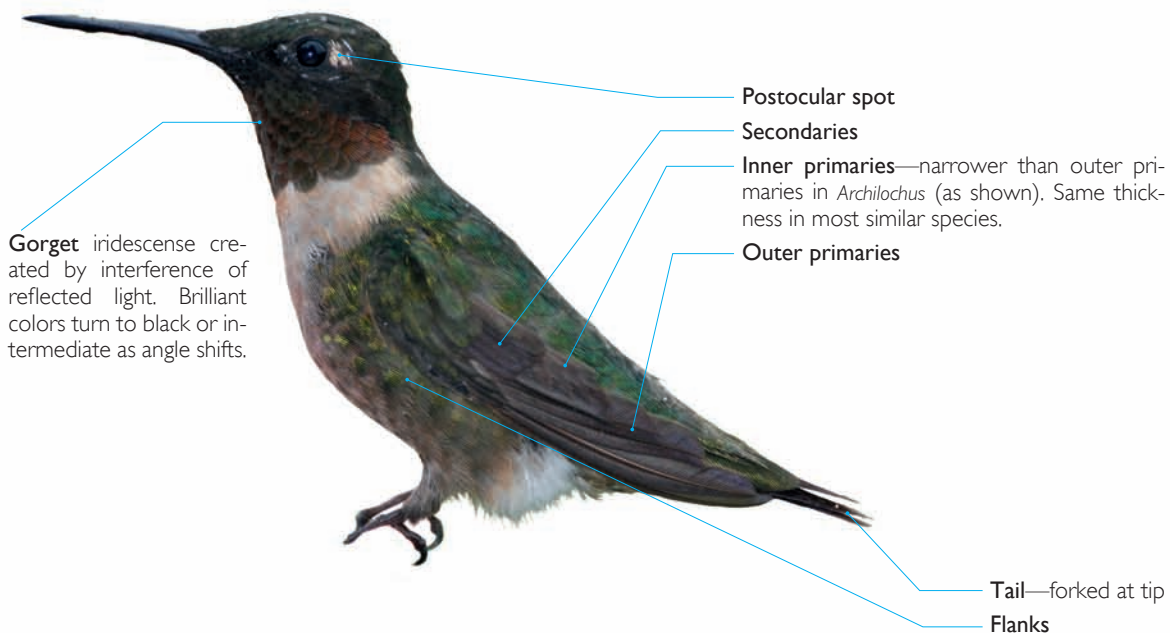


- Orbital ring**—unfeathered skin surrounding eye.
- Iris**—color often varies depending on age of bird. Usually darker in juvs.
- Gape**—fleshy edges at base of mouth. Often prominent in juvs.
- Gonydeal spot**—spot, often red, shown by large gulls.
- Gonydeal angle**—usually stronger (more pronounced) in larger gulls.

Shorebird



Hummingbird



The variation within each species' vocalizations is large—clearly shown in sonograms. The best way that I found to learn songs was to try to describe them to myself. Try to write them down thinking about pitch (high or low, and whether it is going up or down), length of vocalization, and rhythm. A few birds have songs that are phonetically described, for example *witchitty witchitty*—Common Yellowthroat, *sweet sweet I'm so sweet*—Yellow Warbler. I found these useful, but most written descriptions were of little or no use. Listening to tapes helped the most, particularly in confirming identification after listening to a bird. I forced myself to identify every sound I heard. There is no substitute for real-world repetition.

TOPOGRAPHY

Birds are covered in feathers. These are split into batches or groups known as tracts. Knowing these tracts is a great help in bird identification. Color patterns within these feather tracts are usually the same. The major exception is when birds are growing (molting) new feathers.

I remember eavesdropping on a conversation in a pub on the Isles of Scilly when I was 16. The group of top young English birders in the next booth were talking a language I didn't know. They were discussing primary projections, tertial fringes, greater covert bars, alulas. They were using these terms to identify, age, and sex birds. This "tertial talk" as I now call it, at first sounded overwhelming and more like double Dutch. It inspired me to start looking at birds more closely. At first it seemed confusing, but soon the mystery disappeared. As I began to learn the different groups of feathers, how they were used by a bird, and how their appearance changed, it had a big impact on my birding skills. The language of brilliant birders was not so difficult to learn.

One of the keys to learning topography is being able to see birds repeatedly and well. Birdfeeders near your windows are perfect for this. I also find it useful to think of bird topography in human terms. Most of us know words like forehead, crown, legs, feet, breast, belly, and even scapulars. Once you have a good grounding, it is easier to work out the missing parts such as tertials and coverts. Of course, birds change their shape, most notably when they open their wings. Understanding the mechanics of this, and how things fit back into place on the closed wing, is also a great help.

On the confusing side, you will find that tracts of feathers don't appear the same on different groups of birds. For example, scapulars will often cover much of the wing on shorebirds but relatively little on warblers. Learning these differences unfortunately comes down to repetition and experience. However, taking field notes certainly helps you become familiar with them. As a result, when you see an unfamiliar bird, you are able to take in far more information in a shorter time, focus faster on important identification features, and, quite simply, become a much better field birder. *Knowing the name of a bird is not important, but knowing how to look at it is crucial.* The top people in any field are the best because they can analyze things better and faster than others. It is all in the training!

MOLT

Birds essentially do the same things cyclically, this includes molting. They do this for a number of reasons. It is important that feathers be kept in good condition to keep the bird warm, dry, and mobile. Of course, some like to look good to attract a mate! Having an understanding of molt and how it affects a bird's appearance is a large help not only in identifying birds but also in ageing and sexing them.

Molt is complex, but we can try to simplify it. Fundamental to a clear understanding of this process is knowing that birds molt all their feathers at least once a year, replacing them after they have finished breeding. Many also have a molt in spring; these are frequently only partial molts of head and body feathers. These spring molts are often into brighter plumages to attract a mate or help the bird blend into its environment.

A feather starts as a follicle within a sheath (known as a pin)—just as our hairs do. As the follicle grows, it pushes out the old feather. Feathers grow anything from a couple of mm's to a cm per day (larger birds' feathers grow faster, as you would expect). When they are fully grown, they are cut off from the circulatory system so that they can't grow any more. This also means this process doesn't use up any more energy. Molting takes up a lot of a bird's energy and for this reason has a large impact on its lifestyle and behavior. The bird must balance the advantages of having new feathers with the energy required in growing them. Large birds molt much more slowly than small, simply because of this large energy cost, and their molt can therefore be protracted.

Soft downy feathers are quickly replaced by the first strong feathers. These are known as 'contour' feathers, and the first plumage they form is called 'juvenile.' This is the only plumage where all the feathers are the same age and have the same appearance and texture. Adults can also have a uniform appearance, but birds never molt all feathers simultaneously. These adult feathers therefore usually have subtly different colors and patterns of wear.

Small birds usually molt from a briefly worn juvenile plumage to an adult-like plumage. Some of these birds can be aged through the first year of life by looking at retained juvenile feathers. A number of large birds don't start to molt out of their juvenile plumage for over a year. As a broad generalization, the larger the bird, the longer it takes to become an adult. For example, most small gulls take 2 years, medium-sized gulls 3, and large gulls 4, to reach adulthood. Raptors follow a similar pattern, with Bald Eagle taking 4–5 years to reach adulthood but American Kestrel only 1.

In most birds, the difference in appearance between an often scaly or spotted brown juvenile and a boldly patterned adult is striking. Trying to understand what happens in between these two appearances is very important. For the reason stated above, large birds tend to molt very slowly. In fact, they are in active molt the majority of the time. Their plumage is usually made up of feathers of different generations. The newest feathers have adult-like characters, compared to the oldest. This mishmash of feathers can appear confusing, but understanding what happens during development toward adulthood can help unravel many of

the apparent mysteries of a bird's appearance. Also, understanding the sequence in which a bird molts feathers (most follow the same general patterns) is, in most cases, the best way to accurately age it.

In this book, unlike most others, *I have tried to put many of the transitional appearances in the plates*. Birds never change their appearance overnight—it's a prolonged process. If you keep in mind that molt is an ongoing process, it will become easier to understand a bird's appearance.

The timing and patterns of molt vary. Many birds have to make the decision to molt before, after, or during migration. There are no hard-and-fast rules. However, some patterns are clear: If you are a shorebird migrating from the Arctic to Chile for the winter, you can't afford to be using energy for molt, and it would not make sense to have feathers missing in your wings. Hence long-distance migrants either molt before or after migration, this being largely dependent on where food supplies are best. These birds always have long pointed wings—an adaptation to help them fly fast and far. Short-distance migrants, on the other hand, that don't have to fly long distances over water, will often molt while migrating. For example, Western and Least Sandpipers will often show gaps in their flight feathers because they molt while migrating—they are not going far. On the other hand, Semipalmated Sandpiper has to fly to South America so always has a complete set of flight feathers—this can be a great way to differentiate these particular species in flight.

Feathers are molted in different sequences depending on the species. However, it is almost always symmetrical from one wing to the other, and done such that there is balance between the wings.

TERMINOLOGY

One area of confusion in books today is the different terminology used to describe birds. This encompasses 3 different things: age, plumage, and molt patterns. The reason for these differences is in large part due to the lack of a clear and consistent terminology that is a good match for describing each species' appearance.

The following is the most widely used terminology:

The Life Year System

Traditionally this has been the most popular system. I have used it in this book. Fundamental in understanding how it works is knowing that a bird starts its life in the summer (assuming it hatched in the Northern Hemisphere). To calculate a person's age we need to know his or her birthday. Once we know a person's age, this provides a better understanding of behavior and appearance. Birds are the same.

1st-yr: starts as a fledgling in the nest, where its contour feathers grow within the space of a few weeks. This is juvenile plumage. Most birds molt a number of these juvenile feathers in fall, and they are replaced by adult-like or older immature feathers creating the first-winter plumage (1st-w.). In spring, many species, for example Indigo Bunting, will molt in many new feathers, which are often bright, creating the first spring/summer plumage (1st-s.). The term first-year

(1st-yr) encompasses all 3 plumages: juvenile, first-winter, and first-summer. This term is used in this book when there is insignificant difference in a bird's appearance through the first year. At the end of the summer, a small bird has gone through its complete annual molt. At this point it becomes an adult. On occasion, a bird will retain older immature feathers after the first year so that, in this case, it can be aged as a 2nd-year bird. For others, mostly larger birds, the cycle is much longer, and they become 2nd-year (2nd-w. and 2nd-s.), 3rd-year, and so on until they reach adulthood.

Many adults have 2 different plumages or appearances in winter and summer (ducks are the major exception). The typically bolder plumage they molt into in spring, and also have during summer, is called 'breeding' (also known as alternate plumage). The complete molt occurs in late-summer/fall and results in a typically drabber appearance called 'nonbreeding' (also known as basic plumage). A few species, such as ptarmigans, have a third plumage called 'supplemental.'

This terminology describes an appearance or plumage. However, these appearances can be variable. Personally, I do not think of these stages as plumages but as a period in time when a bird is a certain age. Knowing the date we are birding (or a photo was taken) is critical. If you are birding on August 2nd and you know the gull you are watching is approximately 1 year old, after a while you will learn the variation in appearance of birds of that age. Personally, I think of it as a 1-year-old gull, just as I would a 1-year-old child.

The Calendar Year System

As the name implies, this system uses language based on calendar dates—January 1st being a new year. An American Robin this year would be in its second calendar year on January 1st (but not in its 2nd year of life). This is at odds with how we age people, pets, and most things. This terminology is not widely used, but often enough to cause confusion with the Life Year System. The Calendar Year System has no advantages over others and has several obvious problems—it is best not used!

The Humphrey–Parkes System

This is based solely on molt patterns. Because of the cyclical nature of annual molt and its relationship to physical appearance, the Humphrey–Parkes system has become more common, especially for dealing with gulls and raptors. It is particularly valuable when using molt patterns rather than physical appearance as the way to age birds. To a large degree, the systems are intertwined and arguably inseparable.

The 1st cycle includes all the different appearances or plumages the bird has until it starts to molt into its second basic plumage (2nd-winter). This includes juvenile, 1st-winter, and 1st-summer. Using the term '1st cycle' is technically correct during this time period. By comparison a juvenile bird, for example Canada Goose on p.44, that has molted a few feathers, is technically no longer a juvenile, though the majority of feathers are still juvenile. On one hand the term 1st-cycle is correct but lacks detail on plumage; but on the other hand you have a more detailed description of the bird's appearance and plumage that is not (arguably) correct. You take your pick!

In this book I use the latter. You will see a number of images, such as Canada Goose, where the bird has mostly juvenile feathers but has molted a few feathers (see if you can tell which they are). This could have been labeled '1st-cycle' if I had chosen to write the book from that perspective, or '1st-winter.' Again, this is a judgment call. Where the bird has primarily juvenile feathers (over 90 per cent), I have usually called it a juvenile because it helps the viewer understand the appearance of the bird at this stage. Now you can look at all the birds labeled 'juv' and see if they have molted out some of their juvenile feathers!

The major drawback of the Humphrey–Parkes system is that it is at complete odds with other terminology. It is also an unfamiliar language for most people and hard to grasp. A bird is in its first cycle until it starts molting into its second basic plumage when it is about 1 year old—usually first seen as newly growing flight feathers (primaries and secondaries). This transition is often impossible to see in the field. Two birds the same age can be in different cycles, and birds that are a year apart in age can still be in the same cycle. For example, yesterday (July 25th) I watched a 2nd-cycle Herring Gull—How old is it and what does it look like? The answer: you don't know. It could be a 1st-summer/1-year-old bird that has just started its second cycle or a 2nd-summer bird that has not started its third cycle.

However, the understanding of these molt cycles and how different generations of feathers have different appearances is often critical in the correct ageing of some birds. At present, this terminology is poorly understood by most and often misused. It is best reserved for those with a solid understanding of molt.

Birds spend varying amounts of time molting from one plumage to another and therefore have feathers of both plumages at the same time. These transitional birds cause confusion. For this reason, I have treated transitional birds extensively in this book. Besides taking note of different colors and patterns, always remember: one feather is new and one old, so different amounts of wear are often easy to see.

FACTORS AFFECTING APPEARANCE

If all this talk of changing plumages, molt, different feathers, and so on, sounds confusing, you are correct, it is—for everyone. But simply knowing and understanding this is a help in itself.

There are other things that change a bird's appearance that we must also consider. When a bird's feathers are old, particularly in the summer months, they have been subjected to many hardships. Sunlight bleaches feathers, making them paler. The wear and tear of time does the same thing. Not only are colors usually faded, sometimes considerably, but the feathers are also, quite simply, beat up and heavily worn. Certain groups, such as gulls, can look remarkably scruffy and disheveled in the summer months. Juveniles have softer feathers than adults so are more prone to wear and fading.

Some birds appear atypical or outside the norm. These are known as 'aberrant.' Although uncommon, they are frequent enough to warrant consideration when things don't

seem to add up. Some are particularly pale: leucistic; some completely white: albanistic (see *Tree Swallow*, p.330); and, very rarely, all-black: melanistic. Often an aberrant bird will still show the basic patterns of 'normal' color; so always look for these. Size, shape, behavior; probability, and vocalization generally stay the same, so, although these birds are initially puzzling, actual ID is usually fairly straightforward. The only feature that has changed is color.

And of course there is the dreaded 'H' word. The word 'hybrid' comes up a lot today in the serious birding world. As we become more knowledgeable, and have technology to record ever more accurately sight and sound, and the ability to dig deep with things such as DNA analysis and blood sampling, the study and understanding of hybridization grows apace. In some groups, such as gulls and ducks, hybridization is fairly common. In others, such as shorebirds, it is very rare. However, the biological imperative to breed is strong. Even in shorebirds, the frequency of known examples of hybridization is increasing, and no doubt will continue to do so as time passes. The appearance of hybrids ranges across the spectrum, from total similarity to 1 parent to displaying intermediate characters of both. The latter occurrence is the most common. Should you find a bird that is puzzling because it seems to show features of 2 different species, you should consider the chance that it could be a hybrid.

Lighting also has a great effect on the appearance of birds. When the sun is high and bright, the contrast is at its greatest: dark colors look blacker and pale colors look whiter. The lower the sun is in the sky, the richer and more saturated the colors become. At sunrise and sunset, whites become creamy or have red tones and contrast is at its lowest. On overcast days ('flat light'), colors tend to have a more 'accurate' representation. Learning to understand the tricks of light is very important.

In this book, most plates are made up of images taken in flat light for a more accurate representation. On a few pages, there are images that have been taken in both lighting situations (sun and shade); for example, *White Ibis* (p.203). This is lifelike since it happens in the field frequently. When a bird is in the shadow of a tree or building, it is in flat light, while other birds may be in sunlight.

Size illusion can also occur. When looking directly into the sun, birds look slimmer than what they really are. However, while much has been written about size illusion, I personally have rarely thought it significantly impacts field observation, and that the most important thing is still to look longer and more carefully.

Sometimes birds get sick, or their normal way of life is interrupted, perhaps due to unexpected bad weather or shortage of food. As with humans, birds have to adapt to this as best they can. Sometimes they will have to change their normal way of life. For example, if a shorebird that is heading to the Arctic to breed becomes ill, or can't make the journey in a timely manner because there is not enough food to replenish its fat reserves, then it might alter its normal behavior: If it can't breed, why go to the breeding grounds or molt into a bright breeding plumage?—something that takes a lot of energy. If it is sick, it cannot afford to

waste energy molting, because this is not vital to its survival. It may therefore stay farther south than normal and not molt into what is effectively an unnecessarily bright plumage.

Some birds show outward signs of illness or abnormality. Conjunctivitis has had a large impact on House Finch and other birds. It is not uncommon in some areas to see the effects of this around the bird's eyes (see p.29). Birds can also have deformed bare parts. This is most obvious in bill shapes; seeing birds with abnormally long bills is not rare.

Cosmetic color changes also occur due to rust staining, particularly common in groups such as cranes and ducks. Diet also has an impact. For example, House Finches in some areas are yellow rather than red because of their specific diet.

There are other factors that can change a bird's appearance; take them into account but don't be sidetracked; go *back to the basics!*