Plumage Variation in "Kumlien's" Iceland Gull

by Kevin J. Zimmer *



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Figure 1. This Iceland Gull in Basic I (first-winter plumage) is fairly representative of the "average" ground-color and degree of checkering for Basic I (perhaps slightly on the pale side). The bill would appear black at a distance, but note the mildly contrasting gray-green base. Head and bill structure and primary extension of this individual are typical for the species. Photographed in Newfoundland, January 1990 .



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Figure 2. This Iceland Gull in Basic I plumage represents the pale extreme of general coloration, wing-tip color, and amount of checkering. Note the extensive (but still not brightly contrasting) pinkish color to the base of the bill, and the way it grades gradually into the black tip. This bird has a longer bill and a flatter-sloped forehead than are generally considered typical for Iceland Gulls. Photographed in Newfoundland, January 1990.

Few North American birds are less familiar to the majority of birders than is the Iceland Gull (*Larus glaucoides*). With its breeding range lying largely north of Hudson Bay, there is little opportunity for birders to observe this species as a breeding bird. Although it winters regularly south to the Great Lakes (and beyond them along major rivers and at large reservoirs in the Midwest and northern Great Plains) and along the Atlantic Coast to Virginia, a quick check of Christmas Bird Counts from these regions will reveal the numbers to be very low indeed. The bulk of the population winters north of the U.S.–Canada border in the Gulf of St. Lawrence and the Atlantic provinces. South of that area, only the most diligent gull-watchers are likely to encounter a representative cross-section of the age classes of Iceland Gull, and such experience may take years to accumulate.

The widespread anonymity of this species is reflected in the popular identification literature, much of which is conflicting, incomplete, or erroneous. Compounding the problem is the fact that many of the in-depth treatments have been written by European authors and are based largely on the nominate race, *L. g. glaucoides* (breeding in Greenland), rather than on the North American form, *L. g. kumlieni* (e.g., Hume 1980; Grant 1986, although the latter did devote

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Figure 3. This Iceland Gull in Basic I plumage is more coarsely marked than most, but it is typical of many Basic I Icelands in having folded primaries that appear mostly pale gray-brown with whitish fringes. The bill, which in this photograph appears entirely black, had a mildly contrasting olive base. Note also the uniformly checkered tertials. The very rounded head and small bill of this bird impart a delicate look. Photographed in Newfoundland, January 1990.



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Figure 4. This Iceland Gull in Basic I plumage has a more strongly bicolored bill than most Basic I kumlieni, *but note that the black runs in along the cutting edge of the lower mandible, different from the "dipped-in-ink" look of most, but not all, Glaucous Gulls. Note too the evenly checkered tertials (different from most Thayer's Gulls) and the long primary projection. Photographed in Newfoundland, late December 1989.*

some space to *kumlieni*). Recent summaries of field characters by North American authors have been for the most part secondary to broader discussions on the identification of Thayer's Gull (*L. thayeri*) (e.g., Gosselin and David 1975; Lehman 1980; Zimmer 1985, 1990). Further uncertainties with respect to both identification and taxonomy have been introduced by recent discoveries that *kumlieni* interbreeds with Thayer's Gull in mixed colonies on Baffin and Southhampton islands (Gaston and Decker 1985; Snell 1989; see also Godfrey 1986). This revelation and many others have served to raise questions about Neal Smith's (1966) work, which was the basis for the AOU's current treatment of Thayer's Gull as being specifically distinct from both Herring Gull (*L. argentatus*) and Iceland Gull (Snell 1989; DeBenedictis 1990).

When all these elements are factored together, along with the inherent complexities involved in identifying any large gull, it becomes clear that in focusing on *Larus glaucoides* we have entered the Impossible Identification Zone.

Range

The nominate race, *L. g. glaucoides*, breeds in Greenland. It winters mainly in Iceland; in small numbers to the Faeroes, the British Isles, northern Norway, western Denmark, and Sweden; and casually



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Figure 5. This Iceland Gull in extremely fresh Basic I plumage represents the dark extreme in overall coloration, degree of checkering, and (especially) primary coloration. Such individuals strongly resemble classic Thayer's Gulls in Basic I. Note, however, the more uniformly checkered tertials (which in thayeri *are typically solid brown in the centers with checkering limited to the edges), the less conspicuous pale crescents at the tip of each primary, and the small amount of pinkish color beginning to appear at the base of the lower mandible. The possibility that this bird is an intergrade cannot be ruled out. Photographed in Newfoundland, 29 October 1986.*

farther east and south in Europe (Cramp and Simmons 1983). Its status as a winter visitor to North America is supported by only a few specimens (mostly from northeastern Canada), and some of these are disputed (Eirik A.T. Blom, pers. comm.).

"Kumlien's" Iceland Gull (*L. g. kumlieni*), once viewed as a hybrid between Herring Gull (*L. a. thayeri* = Thayer's Gull) and nominate *glaucoides* (Dwight 1925), breeds in North America on southern Baffin Island and in extreme northwestern Quebec. It winters from Newfoundland and the Gulf of St. Lawrence, south on the Atlantic Coast in decreasing numbers to Virginia and North Carolina (casually to Florida) and, rarely, inland, particularly to the Great Lakes region. Extralimital records exist for the Gulf Coast, the Great Plains and the prairie provinces of Canada, the Rockies, and the Pacific Coast, but relatively few of these are supported by specimens. Although the sixth edition of the *AOU Check-list* (1983) lists Iceland Gull as summering in Alaska, the records most likely pertain to the resident north-slope race of Glaucous Gull, *L. hyperboreus barrovianus* (Bailey 1948; Dan Gibson, pers. comm.). Recent reports of Iceland Gulls along the Pacific Coast from British Columbia to California have stirred much debate; some are still under review.

Caveat

Before a discussion of the complexities of Iceland Gull identification, a few cautions are in order. The purpose of this paper is to present readers with a feel for the range of variation in Iceland Gulls occurring in North America. Much of this variation was either overlooked or could not be addressed in the limited available space when most of the standard field guides were written. In the course of discussing variation in Iceland Gulls, I will frequently make comparisons to Thayer's Gulls. It is important to understand that all such discussions and comparisons are based on currently held notions that Iceland and Thayer's gulls are indeed separate species. These notions are coming under increasing fire. The fact that *kumlieni* and *thayeri* are now reported to interbreed means that all discussion of the identification of these two forms must take into account the problems of intergradation. It is increasingly clear that *L. g. glaucoides*, *L. g. kumlieni*, and *L. thayeri* approximate a cline of increasing pigmentation from east to west, in spite of the disjunct breeding range of nominate *glaucoides* with respect to the other two forms. As with all truly clinal variation, there appears to be no clean break in any of the morphological characters that might be used to distinguish these forms in the field, even though the endpoints may be distinct. It is with these endpoints or typical birds in mind that I discuss characters for separating *kumlieni* and *thayeri*.

At the same time, it must be acknowledged that a number of gulls exhibit characters appearing to be intermediate between the two forms. These birds are probably intergrades and cannot easily be assigned to one form or

the other. Although "intergradation" is more commonly used to refer to gene exchange between two subspecies (rather than between two species), it is used throughout this paper to mean simply that genes from one population have found their way into the gene pool of another population. (In this case, *thayeri* genes have entered the *kumlieni* pool, and vice versa.) In other words, I use the term here without making a taxonomic judgment. Keep in mind that an intergrade may have only a slight fraction of its genotype contributed from a "foreign" gene pool. Varying degrees of intergradation within a local population can result in all manner of intermediate phenotypes. The possibility that seemingly intermediate birds are simply the result of individual variation is a matter still open to some question.

All photographs in this paper are from coastal Newfoundland, where Thayer's Gull is considered to be rare, and where *kumlieni* is common. Nonetheless, the presumed rarity of Thayer's Gull is based on potentially mistaken assumptions of what Thayer's Gulls should look like. It is entirely possible that many of the birds considered in Newfoundland to be "dark" Iceland Gulls (including some of the ones pictured in this paper) are in fact intergrades.

The taxonomy of these birds is clearly unsettled, and it is possible that *kumlieni* and *thayeri* will be lumped. More collecting and perhaps banding from the nesting grounds are needed to ascertain the extent of hybridization, the complete range of plumage variation, and the boundaries of the way in which plumage types and intermediates sort out geographically. In the meantime, I would urge that extralimital records of either Iceland or Thayer's gulls in areas where the other form is expected, be treated with extreme caution, particularly when the bird in question is less than typical in any respect.

As noted, it is the intent of this paper to increase awareness of the full range of variation in Iceland Gulls in North America. Readers searching for absolute field marks for separating *kumlieni* from *thayeri* will be misusing the information presented.

General Description

Like most other large gulls, Iceland Gull is a "four-year gull," becoming adult in its fourth year with the acquisition of its fourth or definitive basic (fourth-winter) plumage. Although plumage and structural variability is normal in large gulls, the phenomenon is pronounced in *L.g. kumlieni*. (Throughout the rest of this paper "Iceland Gull" refers to *kumlieni* exclusively, unless otherwise noted.) Perhaps no species of gull in North America can exceed the range of variation demonstrated by Iceland Gulls of all age-classes. This variation is apparent in virtually every character normally considered significant in the identification of large gulls—overall color, amount of barring or checkering on the upperparts, primary pattern, bill color, eye color, tail pattern, and primary projection. As early as 1925, Dwight noted, in reference to *kumlieni*, that "no two specimens are quite alike . . ." There is little or no indication in the standard identification literature that Iceland Gulls vary as much as they do, although it has long been noted by a number of Canada's Great Lakes and Maritime birders (Bruce Mactavish and Stu Tingley, pers. comm.). Most observers simply do not encounter enough Iceland Gulls to gain an appreciation for the range of possible variation this species exhibits. Again, keep in mind that at least some of this variation may be attributed to intergradation with *thayeri*.

Iceland Gulls of all ages do have a standard *gestalt*. They are among the smallest of the four-year gulls, being about the same size as a "typical" California Gull (*L. californicus californicus*). They are, thus, marginally smaller than most Thayer's Gulls and smaller still than most Herring and Glaucous gulls.

In addition to being smaller than most Glaucous, Herring, and Thayer's gulls, Iceland Gulls appear delicate in build. They have smaller, more rounded heads and shorter, thinner bills than do most other large gulls. The same can be said of Thayer's Gulls, but the delicate look is even more accentuated in the typ-

ical Iceland Gull, in which the bill dimensions average smaller than in *L. thayeri*. Iceland Gulls have proportionately larger eyes than many larids (pers. obs.; also see Grant 1986), a feature which, combined with the short bill and more round-headed profile, results in a gentle, dove-like appearance similar to that of Mew Gull (*L. canus*). This effect is heightened by the somewhat short-legged, long-winged build. Primary projection beyond the tail is typically greater than the length of the bill, making Iceland Gulls appear proportionately longer-winged than most Glaucous Gulls. Grant (1986) advocated use of the bill:eye ratio as an aid in separating Iceland Gulls from Glaucous Gulls. By comparing the diameter of the eye (from front to back) to the length of the bill, he arrived at the following rule of thumb: a bill-length to eye-diameter ratio of 5 or more indicates Glaucous, whereas a ratio of 4 or less indicates Iceland.

Ingolfsson (1969) demonstrated that sexual dimorphism in several larger species of *Larus* (including Glaucous and Iceland gulls) can be pronounced. On average, males are larger, with bigger, flatter-crowned heads; longer, heavier bills; and proportionately shorter wings (relative to bill length) than females of the same species. Even the range of intrasexual variation within a species can be marked. The result of all this variation is that the larger male Iceland Gulls routinely overlap Thayer's Gulls of both sexes in most structural characters and can at least approximate many female Glaucous Gulls quite closely, especially the smallest individuals.

As if these sources of confusion were not enough to contend with, we must also consider geographic variation in Glaucous Gulls. *Barrovianus*, which winters along the Pacific Coast irregularly to southern California, averages smaller-bodied and smaller-billed (as well as darker-mantled when adult) than *L. h. leuceretes*, the subspecies that breeds across northern Canada and in Greenland (Banks 1986). Many of the Alaskan birds appear to be particularly long-winged as well (K. Zimmer, pers. obs.; K. Kaufman, pers. comm.). Smaller female *barrovianus* would therefore seem likely to be confused with Iceland Gulls on purely structural grounds, and, indeed, this possible confusion has been a point of contention regarding some recent Iceland Gull reports from the Pacific Coast. Even in the northeastern part of the continent there is overlap between Glaucous and Iceland gulls in primary projection (relative to bill length), most of which probably involves small, proportionately long-winged female Glaucous Gulls and large, proportionately short-winged male Icelands. It is probably safe to say that Iceland Gulls are separable from Glaucous Gulls most of the time on the basis of size and structure. Extralimital records of either species, however, should be supported by plumage and soft-part characters as well. As for field separation of Iceland Gull from Thayer's Gull, identification based solely on structural features is not possible. Leucistic, albino, and excessively bleached Herring Gulls may also be sources of confusion.

Let us then turn to an analysis of feathering and soft-part characters of the various age classes of Iceland Gulls. In doing so I will make comparisons with Thayer's and Glaucous gulls where relevant, but the emphasis is on a thorough coverage of variation in *L.g. kumlieni*. Also, because few birders will encounter Iceland Gulls in full alternate (summer) plumage, the following discussion is focused on the basic (winter) plumage of each age group. These plumage descriptions are based largely on my own field experience and photographs, but have been supplemented by examination of the literature, other photos, and specimens at the California Academy of Sciences and other institutions.

Basic I (First Basic Plumage)

First Basic (first-winter) Iceland Gulls show considerable variation in the general ground-color of their feathering and in the amount and density of barring or checkering on the upperparts. Most individuals are a rather pale tan, a sort of coffee-with-cream color (Figure 1). Many others are a darker gray-brown, and a small percentage are extremely pale, al-

most chalky white (Figure 2). It is a common misconception that such pale individuals of any large gull species in Basic I are the result of feather wear or bleaching. On the contrary, many pale individuals (of both Iceland and Glaucous gulls) can be found from November through January, when the birds are in their freshest basic plumage. (Some of this variation in Glaucous Gulls is subspecific.) These pale birds are also routinely mistaken for birds in Basic II (second-winter plumage), an error that is even more frequently applied to Glaucous Gulls, and one that is perpetuated by some field guides. Separation of pale Basic I Icelands from older birds in transition to Basic II that have not attained their gray mantles and still have dark bills is contentious, but the presence of large amounts of dark checkering in the vent, rump, and wing coverts, along with dark eyes and a solidly dark tip to the bill, would suggest Basic I plumage.

The amount of checkering or barring varies considerably from one individual to the next, with some birds being only lightly marked (Figures 1 and 2), and others being very coarsely marked (Figures 3, 4, and 5). In general, the extent of the markings seems to follow overall pigmentation, but even the chalky-white birds are barred on the rump, undertail coverts, and at least lightly on the wing coverts (Figure 2).

The nature of the tail band in Iceland Gulls in Basic I has been a point of some confusion, again primarily because of the extreme variability of the species. It has been suggested that the presence or absence of a distinct tail band is a good character for separating Iceland Gulls from Thayer's Gulls. This claim is only partly true. A bird lacking a distinct tail band cannot be a Thayer's Gull. But most Icelands in Basic I do in fact have distinct tail bands. True, these bands tend to be considerably paler than on the average Thayer's Gull, but they are nonetheless bands that contrast conspicuously with the rest of the tail and uppertail coverts (Figure 6). In Iceland Gulls there is a much greater tendency for the outer several rectrices to be mottled rather than solidly pigmented, and it is common for some or even most of the inner tail feathers to contain internal markings. Many Thayer's Gulls in Basic I also have the outer two or more pairs of rectrices mottled at their bases but rarely show (in the field) any internal markings on the inner tail feathers. It is common for Thayer's Gulls in fresh plumage to have each rectrix with a pale tip and narrow subterminal bar, but these do not alter the impression of a solid dark band that contrasts with the paler uppertail coverts. It is important to be aware that some Iceland Gulls may have tails that closely approximate those of the



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Figure 6. Although this Iceland Gull in Basic I plumage has a definite tail band, it is paler than would be found in a typical Thayer's Gull. Note also that most of the rectrices are extensively mottled basally, and the outer ones have some mottling at their margins. The upperwing pattern is typical of **kumlieni**. *(Note especially the absence of the dark secondary-bar present in Thayer's.) Photographed in Newfoundland, January 1990.*

typical Thayer's Gull. A significant percentage of *kumlieni* in Basic I lack any real tail band, having instead each feather individually mottled and barred much in the manner of a Glaucous Gull in Basic I. Individuals with this pattern tend to be paler in overall plumage and less heavily marked on the primaries as well. Many other birds cannot be readily assigned to either category, and instead show either broken or ghost tail bands. There is no consensus on the percentage of Icelands in Basic I that fall into each group. My field experience indicates that the majority of birds have a true band, with as many as 15 to 20 percent lacking one. Bruce Mactavish of Newfoundland, who has few peers when it comes to field experience with *kumlieni*, places the number of birds lacking a tail band much lower, at 5 percent or less. No doubt part of the discrepancy is explained by the way in which birds with intermediate patterns are categorized.

The appearance of the folded wing-tip is at least as variable as the tail pattern. Most individuals have wing-tips that appear distinctly paler than the rest of the wing, with a variable amount of dusky or pale brown on each primary (Figure 1). These markings range in shape and extent from distinct chevrons at the tip of each primary to contrasting stripes formed by outer webs that are entirely or mostly dusky.



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Figure 7. The pure white wing-tips (only one middle primary showing a faint subapical spot) could mark this Iceland Gull in Basic I plumage as nominate **glaucoides** *or could simply represent the pale extreme of variation in* **kumlieni**. *Note the diffuse pinkish color at the base of the bill. This bird also lacked any noticeable tail band. Photographed in Newfoundland, January 1990.*

Even individuals with more extensive dusky markings will typically show at least a few primaries with distinct subapical chevrons. These chevrons are present only in birds in juvenal and Basic I plumages. In many birds the entire wing-tip may appear to be pale brown or gray with almost no white (Figure 3), appearing concolor with the rest of the wing. Some birds have strikingly white wing-tips that at even moderate distances could pass as being entirely white. On closer inspection most of these individuals show at least a few faint dusky markings on the primaries. A *very few* birds seem to have pure white wing-tips, devoid of any internal markings (Figures 2 and 7). Whether these individuals represent occasional strays of nominate *glaucoides* or simply the extreme end of variation in *kumlieni* is not known. Even nominate *glaucoides* typically have at least a gray chevron at the tip of each primary (Grant 1986). Absence of markings on the primaries does not necessarily correlate with an overall lack of barring on the body feathering and wing coverts. Some of the most coarsely-marked individuals also have very white wing-tips.

The nature of the tertials and secondaries on the folded wing is helpful. In Iceland Gulls these feathers are typically more heavily marked than the wing-tip and tend to be densely and uniformly marbled with brown bars, loops, and other irregularly-shaped markings (Figures 4 and 5). In Thayer's Gulls the same feathers are usually solidly brown (with some light barring or mottling around the edges) and appear a shade or two paler than the wing-tips. A minority of Thayer's will have significant internal pale markings in the tertials but will still show at least a reduced panel of solid brown somewhere in the bunched feather group. Paler individual Icelands may have very little (if any) barring in the tertials (Figures 1, 2, and 7), in which case those feathers would appear mostly white, making them even more different from the tertials of



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Figure 8. This Iceland Gull in Basic I plumage exhibited a folded-wing-tip pattern similar to the individual in Figure 3 (i.e., with extensive pale brownish in the primaries), but notice the translucent "frosty" look of both surfaces of the spread wings (accentuated by back-lighting). This is another longer-billed, flatter-crowned bird. Photographed in Newfoundland, January 1990.

Thayer's Gulls. The appearance of the tertials seems to be a very consistent difference between the Basic I plumages of *thayeri* and *kumlieni* but should not be relied on as the sole basis for an identification. A small percentage of individuals in Basic I have an intermediate pattern and are not safely assignable to one form or another. These probably represent intergrades.

From above, flying Iceland Gulls in Basic I plumage usually give the impression that their wing-tips are paler than the rest of the wing or concolor with it, regardless of the individual variation in dusky internal markings of the primaries (Figure 6). The remainder of the upperwing is quite uniform, with no obvious secondary bar (Figure 6), as is shown in Thayer's in Basic I. At least some Icelands do have a pale secondary bar, although it may be apparent only under good viewing conditions. From below, all of the flight feathers appear uniformly translucent white (Figure 8)—especially on backlit birds—without the thin dusky trailing edge typical of Thayer's Gull.

Bill color is also variable, although there are some features that appear to be consistent. Most *kumlieni* in Basic I will appear to be entirely black-billed at long range or in poor light (Figure 5). Closer inspection will almost invariably reveal a slightly paler base, which may be dark gray, gray-green, dark-olive, dark reddish-brown, or some other variant (Figures 1, 2, 4, 6, and 7). This marginally contrasting color may cover the basal one-third (or more) of the bill and is usually more evident as winter progresses. In many individuals the base, being blue-gray or gray-green, is noticeably paler than the distal end. In any event, this contrast is an important consideration in attempting to separate *kumlieni* in Basic I from *thayeri* in Basic I. Most Thayer's Gulls are entirely black-billed until at least late January, at which time a small amount of pinkish or fleshy color may appear on the base of the bill. It should be emphasized that these are tendencies, and that occasional exceptions (e.g., Thayer's Gulls with some pink in the bill before January, or Iceland gulls with completely black bills) may occur. Identification should never be based on bill color alone. While virtually all *kumlieni* appear to show some contrast (however slight) at the base of the bill, they do not exhibit the strong contrast shown by Glaucous Gulls in Basic I, which typically have bright pinkish bases sharply cut off from "dipped-in-ink" black tips. Not only is the color contrast much less conspicuous in Iceland Gulls, but also the border between the contrasting areas is not so neatly delineated. In *kumlieni* the black of the tip runs back along the culmen and the cutting edges of the bill in an irregular fashion (Figures 2, 4, and 7) quite different from the abrupt squared-off line between black and pink in most *hyperboreus*. (Some Glaucous Gulls show just a sliver of black extending back along the cutting edges, primarily on the lower mandible.) Occasional *kumlieni* in apparent Basic I plumage will approach the Glaucous bill in both pattern and degree of contrast, but these almost always represent Basic II birds that have yet to attain their gray mantles. A truly bicolored bill is more typical of *glaucoides* in Basic I, but even some of these nominate birds may appear black-billed at long range in the field (Grant 1986).

Eye color in birds in Basic I is always dark. Iceland Gulls do not seem to show as extensive a dark smudge of feathering surrounding



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Figure 9. A typical Iceland Gull in Basic II (second-winter plumage) with a gray back and scapulars mottled around the edges; moderate streaking and spotting remaining in the wing coverts and tertials; a bicolored bill with a pale tip; and extensive dirty gray-brown blotching and streaking to the head, neck, and sides of the breast. This bird has gray-brown primaries that are a few shades darker than the rest of the wing, a trait shared by a significant percentage of Iceland Gulls in Basic II. Photographed in Newfoundland, January 1990.



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Figure 10. The dark-gray primaries (each with a conspicuous pale fringe) and tail band of this Iceland Gull in Basic II plumage are similar to those of a Thayer's Gull in Basic II. Once again, the appearance of the tertials is helpful. In Basic II Icelands these are typically white with some gray barring. In like-aged Thayer's Gulls these feathers are almost solidly gray (at most, barred around the edges), typically a shade paler than the primaries. The tail band of this bird, although barely visible here, is also paler and more diffuse than is typical of Thayer's Gull. This bird could easily be an intergrade. Photographed in Newfoundland, January 1990.

the eyes as that which typifies so many Thayer's Gulls in Basic I. The former frequently have a dark smudge in front of the eye. Leg and foot color is pinkish or reddish-pink, sometimes becoming quite bright, and is indistinguishable from that of Thayer's and Glaucous gulls.

Basic II (Second Basic Plumage)

Basic II (second-winter) plumage in Iceland Gulls is at least as variable in most characters as Basic I. A typical individual (Figure 9) will have lost most of the crisp checkering or barring of Basic I, perhaps retaining some in the tertials, secondaries, and wing coverts. The neater look of Basic I plumage is replaced by irregular dusky smudges throughout the underparts, scapulars, and sometimes the wing coverts (assuming that the latter are not still distinctly checkered). Many birds are also heavily smudged and streaked with gray-brown about the head and neck, while others are nearly clean white in these areas. Most birds will have mantles that are partially to largely clear gray (often somewhat ragged at the edges), although this character can be difficult to discern on some individuals. Some birds are simply slow to attain their gray mantles and can easily be mistaken for birds in Basic I.

Most birds in Basic II will show a distinct tail band that is smoothly washed light gray or brown and mottled only on the outer rectrices. The band is frequently thinner than in Basic I but is often more conspicuous due to greater contrast with the whitish base and rump, which have lost most of their barring. Birds without tail bands almost always have several rectrices with internal bars or smudges.

The primary pattern in Basic II can be especially confusing to birders relying on standard field guides. While the pattern can vary greatly from bird to bird, many individuals will show folded wing-tips that are darker than the rest of the wing, something not illustrated in any North American field guide. This darker color is often a light brown, but may be a medium-to-dark brown or dark gray (Figures 9 through 12) very closely approximating (or even duplicating) the color of the wing-tips in Thayer's Gulls in Basic II. Such darker-primaried birds have a tendency to have darker tail bands as well, pushing the resemblance even closer toward a Thayer's Gull of the same age. These individuals are perhaps best identified at rest by the whiter tertials (Figure 10), and in many cases by the paler eyes. Thayer's Gulls in Basic II are also more likely to have distinct pale crescents around the tip of each primary, although this character varies with wear. The same dark Icelands in flight are best separated from Thayer's Gulls by the lack of a secondary bar on the upper surface of the wing (although retention of variable amounts of internal barring in the secondaries can make this distinction tenuous) and often by a lesser number of dark primaries. The opposite extreme is also encountered, with many birds having white or cream-colored pri-



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Figure 11. The dirty, mottled appearance of this Iceland Gull in Alternate I molting to Basic II, combined with its moderately dark, brown primaries, would render it unidentifiable to birders relying on standard guides. The primary extension is toward the short end of the spectrum, and well within the range of Glaucous Gull. Note that although the bill is sharply bicolored, the black runs in along the cutting edge of the lower mandible, and the base is dull orange-pink. Once again, the possibility that this bird is an intergrade cannot be ruled out. Photographed in Newfoundland, 29 October 1986.

maries with only minimal pale-gray or light-brown markings. As in Basic I, the rare individual may have wing-tips that appear to be pure white. All manner of intermediate patterns exist, but most birds will have extensive brown or gray in the primaries confined to the narrow outer webs and the tips of the outer five or fewer primaries. This character, combined with the lack of any kind of secondary bar, should in most cases serve to separate flying birds from Thayer's Gulls.

Bill color and pattern is more variable than in Basic I. Most individuals show a distinctly two-toned bill (Figures 9 through 12) that is dull pink (but not the bubble-gum pink of Glaucous Gull), gray, or horn-color at the base. The delineation between the dark tip and the pale base (Figures 9 through 12) is typically not as sharp as in Glaucous Gull. Many other birds will have bills that are mostly blackish with a slightly contrasting base (typical of Basic I birds) and the age can be gauged only on the basis of plumage characteristics. Most



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Figure 12. Iceland Gull in Basic II. Here is another bird that could present an identification nightmare. In flight the wing pattern would allow ready separation from Herring Gull, but on the water we must rely on structural differences, the checkered tertials (solidly colored in Herring Gull), and the brown (not blackish) wing-tips. Separation from a like-aged Thayer's Gull is more tenuous. The best clue on this bird is again the highly mottled pattern of the tertials. Eye color (if it could be seen) and the spread-wing pattern could be useful. Otherwise, there is nothing on this bird to distinguish it from Thayer's Gull. This bird is an excellent candidate for being an intergrade. Photographed in Newfoundland, late December 1989.

Figure 13. This Iceland Gull is a typical representative of Basic III (third-winter plumage), with clear gray mantle/scapulars, only small amounts of barring in the coverts, whiter underparts, and a mostly greenish-yellow bill with a black subterminal band. This bird is heavily mottled about the head and neck, a character that is subject to considerable variation in birds in Basic III and Definitive Basic (for contrast see Figure 14). Photographed in Newfoundland, January 1990.



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Figure 14. Iceland Gulls in Basic III (front left) and Definitive Basic plumages. The bird in Basic III pictured here differs from the individual in Figure 13 in having pure white primaries, no barring in the tertials, and less extensive dusky mottling on the head and neck. This photograph also illustrates the range of wing-tip coloration, from the solidly white primaries of the bird in Basic III to the charcoal-gray with white tips of the two right-hand birds, to the apparently jet-black primaries with white tips of the upper left bird. Were the latter not the smallest-headed and shortest-billed of the four, it would be tempting to call it a Thayer's Gull. As it is, this bird probably represents an intergrade. Photographed in Newfoundland, January 1990.



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Figure 15. This Iceland Gull in Definitive Basic (fourth-winter or adult winter plumage) is a typical adult kumlieni, *with clear gray mantle and wing coverts, white underparts, charcoal-gray (not black) primaries with white tips, dark yellow eyes, and a greenish-yellow bill with a red gonydeal spot. This individual is moderately mottled about the head and neck. Photographed in Newfoundland, January 1990 .*

birds in Basic II, regardless of whether they have bicolored or mostly blackish bills, have a tiny pale tip to the bill. This feature may be visible only at close range.

Eye color in Basic II ranges from dark brown (as in all Basic I birds) to golden. Most individuals could be described as having amber eyes, distinctly yellowish and yet darker than the bright yellow of many adult gulls. In most individuals, the adult eye color should be attained by the second summer at the latest.

Basic III (Third Basic Plumage)

Third basic (third-winter) plumage in Iceland Gulls (as in other "four-year" gulls) is less variable in most respects than are earlier plumages. The mantle and scapulars are entirely clear gray, and the underparts are mostly white (Figures 13 and 14). The wing coverts may be entirely gray or, more frequently, may show small amounts of brown. In general this plumage is cleaner looking than Basic II, lacking the extensive dusky blotching common in that plumage (Figures 13 and 14). There is variation in the amount of dusky smudging or streaking on the head and neck (Figures 13 and 14), but this variability is true of Basic III and Definitive Basic in most species of large gulls. The tertials on a standing Iceland in Basic III are typically clean white, not the dirty white with faint barring typical of Basic II. Birds in



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Figure 16. Iceland Gull in Definitive Basic plumage. This bird has medium-gray primaries with less-sharply defined white tips, clean white head and neck, and shorter-than-average primary extension. Photographed in Newfoundland, January 1990.

Basic III usually have no tail band or only broken remnants of one (usually in the form of pale gray streaks in the distal one-quarter of the tail).

Variability in primary pattern parallels that of the other age-classes, with a few individuals showing entirely white wing-tips (Figure 14), others with charcoal gray wing-tips, and most falling somewhere between (Figure 13). Where dark pigmentation does exist in the primaries of birds in Basic III, it is some shade of gray, not brown as is often the case in younger age-classes.

Bill color in birds in Basic III is usually greenish-yellow, with a distinct pale tip and a blackish subterminal band or blotch of varying extent (Figures 13 and 14). Often the beginnings of the red gonydeal spot are apparent, imparting a bill pattern not unlike that of adult California Gulls or other large gulls with less than fully adult bill patterns. Birds with bill patterns still identical to those typical of Basic II are frequently encountered.

Definitive Basic

Iceland Gulls in Definitive Basic (fourth-winter or adult winter) plumage have light gray mantles, scapulars, and wing coverts, lacking any brown tones (Figure 15). The standard shade of gray is somewhat paler than the mantle color of a typical Herring Gull (making it paler still than that of a typical adult Thayer's Gull), but the exact color varies slightly among individuals. As is always the case when looking at gulls, the effects of light and background conditions on our perceptions of mantle color must be accounted for. The tail and underparts are immaculately white. As with most other large gulls in definitive basic plumage, many Icelands exhibit a "hood" of grayish mottling or smudgy streaking about the otherwise white head, neck, and upper breast. The density and extent of these markings may vary greatly from bird to bird; the most common condition seems to be light smudging relegated to the sides and back of the neck and top of the crown (Figure 15). Indeed, some adults may entirely lack such markings (Figure 16).

Bill color may be bright yellow throughout, clear greenish-yellow throughout, or more greenish at the base and more yellowish at the tip, all with a large red spot at the gonys (Figures 15, 16 and Cover photograph). Leg and foot color is a fairly bright pink.

Eye color is variable among adult Iceland Gulls. Most birds have amber or golden eyes that are typically darker than the yellow eyes of Herring and Glaucous gulls. These birds can easily appear brown-eyed even at close range. A small but significant percentage (less than 20 percent, possibly much lower than that—pers. obs.) of Icelands do indeed have brown eyes as adults. Smith (1966) reported a statistically significant association between the extent of melanism in the eyes



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Figure 17. The primaries of this Iceland Gull in Definitive Basic plumage are very lightly marked with charcoal-gray. The outer five primaries show some dark marking, but in the eighth, seventh, and sixth primaries these marks are limited to small subterminal bars. The ninth and tenth primaries have smaller-than-average dark wedges on their outer webs. Photographed in Newfoundland, January 1990.



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Figure 18. Iceland Gull in Definitive Basic. A common general primary pattern among darker-pigmented Iceland Gulls: the outer four primaries with alternating stripes formed by large white slashes and dark-gray wedges, and a very small dark subterminal bar on Primary Six. Note that a "washed-out" image of the pattern shows through to the underside of the wing. Photographed in Newfoundland, January 1990.

and primaries of *kumlieni*. Neither Gaston and Decker (1985) nor Snell (1989) could find evidence of any such correlation for Iceland Gulls breeding on Southampton Island or along the east coast of Baffin Island. My own field work has likewise failed to suggest any relationship between pigmentation of the eyes and that of the primaries, although larger sampling would be needed before such a relation could be ruled out. If such a correlation exists, it would make confusion with the normally dark-eyed Thayer's Gull even more likely. The tendency for amber-eyed birds to appear dark-eyed in the field is heightened by the presence in many birds of darker gray feathering anterior to the eye.

Given the difficulties in ascertaining true eye color in the field, and the fact that both amber-eyed and brown-eyed forms of Iceland Gull are common and that occasional Thayer's Gulls can have pale eyes (Lehman 1980), it should be obvious that eye color cannot be used as the key element for identification.

Some attention has been paid in print to differences in orbital-ring color among Iceland, Thayer's, and Glaucous gulls (e.g., Smith 1966; Ingolfsson 1970; Lehman 1980). The orbital ring is typically inconspicuous in winter, but swells and intensifies in color late in the winter as breeding season approaches. The orbital rings of Iceland Gulls are reddish-purple, those of Thayer's are purple, and those of most Glaucous Gull populations are yellow or orange. Strang (1977), however, has reported variation in the orbital-ring color of Glaucous Gulls (*L. h. barrovianus*) through the breeding season (from yellowish to violet-brown); Johnston (1956) found such color variation in California Gulls as well. There is also accumulating anecdotal evidence that at least some *barrovianus* have red orbital rings (Eirik A.T. Blom, pers. comm.). Current evidence indicates that orbital-ring color is not reliably established as a field mark defining any of these three species—Iceland, Thayer's, and Glaucous—and that more research is needed before the extent of individual, seasonal, and geographic variation is known.

Contrary to statements by Grant (1986), the primary pattern in *kumlieni* in Definitive Basic is extremely variable. This variability is clearly evident in both swimming and flying birds (Figures 14 through 20). In a very small percentage of birds, the folded wing-tips appear to be entirely white (Cover photograph). The spread wings of the same individuals will usually (but not always) reveal at least some light-gray markings on the outer primaries. Again, whether the rare bird with entirely white-tipped primaries represents a stray of the nominate *glaucoides*, or simply the extreme in variation within *kumlieni*, is problematic. The other extreme (accounting for a large percentage of birds) in folded wing pattern is extensively charcoal-gray primaries



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Figure 19. Iceland Gull in Definitive Basic. Note the translucence of the flight feathers, as well as a ghost representation of the upperwing pattern on the undersurface of the wing. The distribution of dark pigmentation on the upperwing of this bird is only slightly less extensive than on the average adult Thayer's Gull, but because the markings are dark gray rather than black they show much more faintly on the underwing of Iceland. Photographed in Newfoundland, January 1990.

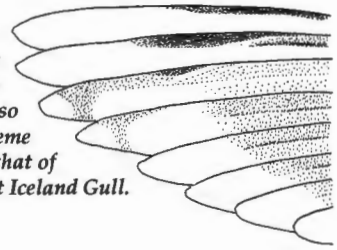


Figure 20. A comparison of wing-tip patterns between five different Iceland Gulls and a typical Thayer's Gull (bottom), all in definitive basic plumage. Among the Iceland Gulls note the range of variation not only in extent and distribution of dark pigmentation, but also in the shade or intensity of the color. Note also the extreme similarity of the Thayer's Gull wing-tip to that of the adjacent Iceland Gull.

with large white spots at the tips of the outer three or four (Figure 15). This look almost duplicates that of adult Thayer's Gulls, but in good light the distinction in primary color (jet-black in Thayer's, blackish charcoal-gray in Iceland) should be apparent. A very few birds (possibly intergrades) seem to have genuinely blackish primaries of a shade that is not noticeably different from that in Thayer's.

The differences in true primary pattern between Iceland and Thayer's gulls are revealed in the spread wing but can be difficult to see on flying birds. For this reason, photos of extralimital individuals in flight should be obtained to assess primary pattern accurately. On even the most heavily-pigmented Icelands the dark markings seem to be confined, at most, to the outer five primaries (numbers 6–10 when numbering from the innermost primary outward), or, more often, the outer four (Figure 20). The markings on primaries 6 and 7 are typically little more than small subterminal patches, bars, or spots (Figures 17 through 20). Primaries 8 and 9 may have dark subterminal marks running into long dark wedges along the narrow outer webs for up to one-half to two-thirds the length of the feather. Primary 10 has the longest dark stripe along its outer web but typically lacks any dark subterminal marks, leaving the tip of the feather extensively white. Thayer's typically has dark pigmentation distributed over the outer six primaries, showing black subterminal marks that are wider and that run into longer black stripes along the outer webs. These distinctions in precise primary pattern are readily seen in photographs and are best seen in the field when a bird stretches, hovers over one spot, or in some way raises its wings slowly so that the outer primaries are spread. In direct fast flight the primaries are more tightly held and overlapped, and precise differences may not be apparent. Many Iceland Gulls in direct flight will show only a long dark stripe back from the wrist along the leading edge of the wing. This pattern results from the combined dark outer webs of the two or three outer primaries overlapping and concealing the white inner webs of the same feathers.

I have described only the two extremes in Iceland Gull primary pattern. Everything between is likely to be encountered in the field. Not only does the distribution of dark pigment in the primaries vary, but so too does the intensity of pigment. A blackish charcoal-gray occurs, as do pale-gray markings that are concolor with the rest of the wings and mantle.

From below, most Iceland Gulls in Definitive plumage will show entirely whitish translucent flight feathers, particularly when strongly backlit. The dark subterminal marks on the outer primaries of heavily-pigmented birds may show through as gray

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