



OTTO FRENGEN

Figure 1. Breeding pair of *L. f. fuscus* in typical definitive alternate plumage. Note the even blackish color of the back and wings and the relative lack of contrast with the black primaries, the small white primary spots, the long wings with the tip of the tail opposite or falling short of the fourth primary tip, and the relatively long yellow legs. Horsvaer, northern Norway. June 1986.



PETER W. POST

Figure 2. Typical example of *intermedius* from the west coast of Sweden. The back and wings are lighter than in *fuscus*, and the contrast with the black primaries is therefore greater. Hällö, Bohuslän Province, Sweden. 16 July 1992.



ROGER TIDMAN

Figure 3. A typical *graellsii*. The shade of gray, and the contrast with the black primaries, precludes this bird from ever being mistaken for any other subspecies of *L. fuscus*, despite the small size of the white primary tips caused by wear. Northumberland, England. June 1982.



ROBERT H. LEWIS

Figure 4. A Dutch intergrade (*intermedius* × *graellsii*) showing the mantle and wing color characteristic of the majority of Lesser Black-backed Gulls breeding in the Netherlands. Maasvlakte, Rotterdam. 16 July 1994.



The Lesser Black-backed Gull in the Americas

Occurrence and Subspecific Identity

Part I: Taxonomy, Distribution, and Migration

PETER W. POST *
and **ROBERT H. LEWIS †**

GULL WATCHING is one of the most challenging and rewarding aspects of birding. This is no doubt due in part to the large population of gulls, the ease with which they can be observed, the subtle identification challenges they present, and the exciting possibility of finding a wanderer from another coast or continent.

For much of the past forty years, one of the most eagerly sought prizes in the northeastern U.S. and eastern Canada has been the Lesser Black-backed Gull (*Larus fuscus*) of northern and western Europe. But in the last two decades, this species has undergone a continent-wide expansion and is no longer restricted to the Northeast, nor even in the New World to the U.S. and Canada. The total number of Lesser Black-backed Gulls seen on the National Audubon Society Christmas Bird Counts has been increasing every year and is still increasing. In fact, the Lesser Black-backed Gull has re-

cently been discovered breeding in Greenland (Boertmann 1994), and one, mated to a Herring Gull, was found breeding in southern Alaska (van Vliet et al. 1993).

Discovery and Expansion in the New World

1850 to 1949. The first North American records of Lesser Black-backed Gull consist of specimens collected in Greenland in 1850 (Boertmann 1994, Table 1) and on 15 April 1920 (Salomonsen 1967, Table 1). The first bird reported for North America outside Greenland was an individual seen on 9 September 1934 at Beach Haven, Ocean County, New Jersey (Edwards 1935). This record was followed by eight reports of birds from the coastal New York City and New Jersey area in the late 1930s and 1940s (Kuerzi and Kuerzi 1935, Elliott 1940, Cruickshank 1942, Alexander 1946), a 1938 report from Key West, Florida (Sprunt 1938), a 1948 specimen from Maryland (Buckalew 1950, Table 1), a 1948 record from Indiana (Brock 1979), which is the earliest inland record for North America, and a 1949 specimen from upstate New York (Beardslee and Mitchell 1965; Table 1).

1950 to 1994. Sight and specimen records continued to accumulate at a slow rate from 1950 until the mid-1970s, when the number of reports per year began to rise noticeably, if not exponentially. By the 1980s, *L. fuscus* had been recorded from all of eastern and central Canada and from all the Great Lakes states and along the entire Atlantic and Gulf coasts of the U.S.

As of the first half of 1994, Lesser Black-backed Gulls have been reported in all 31 states and the District of Columbia in the eastern half of the United States, except for West Virginia (DeSante and Pyle 1986, White 1990, Hall 1993, Stedman 1994). In the Great Plains states it has occurred once in North Dakota (Martin 1991) and three times in Nebraska (Silcock and Roche 1994), and at least one bird has occurred annually since 1984 in Oklahoma (Newall 1984; J. A. Grzybowski, pers. comm.). Farther west it has occurred at least thirteen times in Colorado (Webb and Conry 1978; R. Knight, pers. comm.), once in Utah (Kingery 1991), and six times in California (Binford 1978, Small 1994). There are also three acceptable records from southeastern Alaska (Gibson and

* 141 West 73rd Street, New York, New York 10023-2917

† 176 Hunter Avenue, North Tarrytown, New York 10591-1315

Lesser Black-backed Gull

Kessel 1992; T. G. Tobish, pers. comm.), including a specimen (Gibson and Kessel 1992; Table 1) and a bird found mated to a Herring Gull near Juneau in 1993 (van Vliet et al. 1993).

In Canada, *L. fuscus* has been recorded in all ten provinces and in the Northwest Territories (DeSante and Pyle 1986, White 1990). Although regular well inland in southern Ontario, it is still casual in the Prairie Provinces: it has occurred about four times in southern Manitoba in the Winnipeg area (P. Taylor, pers. comm.) and four or five times in northern Manitoba at Churchill (P. Benham, J. Schulenberg, and P. Taylor, pers. comm.), five or six times in Saskatchewan (R. Kreba, pers. comm.), and about four to six times, with only one confirmed, in Alberta (P. Sherrington, pers. comm.). It has occurred twice in British Columbia (Campbell 1990, Siddle 1994). The first Canadian record was at Churchill in 1968 (Godfrey 1986).

Ron D. Weir and Ron Ridout have provided a table detailing the explosive increase of reports in Ontario from 1977 to 1993 (Table 2). Tove (1989) provides a similarly dramatic chart for North Carolina and South Carolina, and, indeed, comparable tables could probably be prepared for many states and provinces bordering the Atlantic Ocean, the Great Lakes, and the Gulf of Mexico. The Lesser Black-backed Gull is recorded regularly in Greenland, where it is also increasing. The species occurs regularly in Bermuda (Amos 1991).

According to the *AOU Check-*

list (1983), Lesser Black-backed Gulls winter regularly in small numbers in North America from the Great Lakes region, Labrador, eastern Québec, and Newfoundland, south to Florida and along the Gulf coast west to Texas. The first report of Lesser Black-backed Gulls on a Christmas Bird Count (one each from New York and Kings counties, New York) was during the 1962-1963 season (Cruickshank 1963). Thirty years later, the 1992-1993 counts (including count week) recorded 160 individual Lesser Black-backed Gulls on 86 counts in three Canadian provinces, twenty-one states, and the District of Columbia (Le Baron 1993). One hundred forty-three of these birds were found from Newfoundland on the Atlantic seaboard to Texas on the Gulf coast, eleven in the Midwest (Ohio, Michigan, Indiana, Illinois, Iowa), one in Kentucky, one in Tennessee, and three in Bermuda. The largest number of individuals recorded were from New York to North Carolina (100) and in Florida (9), latitudes equivalent to the main wintering areas in the Old World.

An early analysis of North American Lesser Black-backed Gull records by Webb and Conry (1978) indicated that "some individuals migrate through the U.S., perhaps to winter farther south along the coasts of Mexico, Central and South America, and in the Caribbean Islands." Indeed, to the south of the U.S., there are reports of *L. fuscus* (although many of these lack any details) from Abaco in the Bahamas (Norton 1994), Puerto Rico (Nor-

ton 1988a, Raffaele 1989), St. Croix (Norton 1986), Antigua (Norton 1988b), Aruba (Voous 1977, 1983), St. Martin (Voous and Koelers 1967, Voous 1983), Trinidad (French 1991), Tobago (French 1991), Mexico (Howell and Webb 1995), Venezuela (Altman and Swift 1989), Guyana (D. Finch and A. Maley, pers. comm.), French Guiana (Devillers 1979), and on the Pacific coasts of Panama (Smith 1982) and Costa Rica (S. Perkins, pers. comm.). In addition to the birds that come from the northern Palearctic, it is also likely that some birds directly cross the Atlantic to the southeastern U.S. and the Caribbean from southern Europe or the African coast.

An "immature" gull collected in Argentina on 26 March 1931 and identified by Robert Cushman Murphy as a Lesser Black-backed Gull (Steullet and Deautier 1939) may be an example of Olrog's Gull, *L. (belcheri) atlanticus* (Narosky, pers. comm.). The specimen is extant (N. A. Bó, pers. comm.) and needs to be reexamined.

Maximum numbers of *L. fuscus* seen in a single day include 11 from the Chesapeake Bay Bridge and Tunnel, Virginia, 26 October 1985 (R. D. Barber, pers. comm.); 31 at Cape Point on the North Carolina Outer Banks, 28 January 1995 (E. S. Brinkley, pers. comm.); 35 at the Pompano landfill, Pompano, Florida, 10 April 1993 [although the published report (Langridge 1993) states these last birds were all "immatures," according to the observer about a dozen were

adults, the rest first- and second-year birds (A. Wormington, pers. comm.); and 40 at Penn Manor Lakes and landfill, Bucks County, Pennsylvania, 5 January 1994 (Brinkley et al. 1994). In summer, up to 19, mostly first-

summer birds, were at Hart-Miller Island, Maryland, 20–31 July 1992 (Armistead 1992).

Taxonomy

The taxonomy of the Lesser Black-backed (*L. fuscus*)/Herring

Gull (*L. argentatus*) group is extremely complex. For the purposes of this article we follow Grant (1986), who treats *L. fuscus* as a separate species consisting of three subspecies, *L. f. graellsii*, *L. f. intermedius*, and

TABLE I
NEW WORLD SPECIMENS AND BANDING RECOVERY OF LESSER BLACK-BACKED GULL, THROUGH 1993

Location	Date	Disposition	Age and Sex	Reference
Nanor Talik, Greenland	1850	ZMUC #65272	adult	Boertmann 1994; Boertmann, pers. comm.
Qôrmoq (Qoormoq), Godthåb District, Greenland	15 April 1920	ZMUC #65271	adult male	Salomonsen 1967; Preuss, pers. comm.
Godthåb, Godthåb District, Greenland (see text)	1 June 1961		banded as young, "not yet flying" Faeroe Islands 1958	Salomonsen 1967, 1971; Boertmann, pers. comm.; Preuss, pers. comm.
Faro Segunda Barranca, south of Bay of San Blas, Buenos Aires, Argentina (see text)	26 March 1931	Museo de la Plata, #6366, La Plata R., Argentina	female immature	Stellet and Deautier 1939; Nelly A. Bó, pers. comm.; Preuss, pers. comm.
Assateague Island, Worcester Co., Maryland	7 October 1948	USNM #421801	adult female	Buckalew 1950; J. P. Angle, pers. comm.
S. Buffalo, Erie County, New York	14 March 1949	BSNS #4084	adult female	Beardslee and Mitchell 1965
near Rutherford, Bergen County, New Jersey	9 February 1958	AMNH #468815	adult female	Jehl 1958
near Morocco, Newton County, Indiana	9 April 1962	USNM #532341	adult female	Mumford and Rowe 1963; Angle, pers. comm.
Fresh Pond, St. Martin, Lesser Antilles	13 January 1966	ZMA #18733	first-year female	Voous 1967, 1977; Prins, pers. comm.
Castle Harbor, Bermuda	10 November 1969	BAM #B444 Wingate	adult female	Wingate, pers. comm.
Courtney Campbell Causeway, Tampa, Hillsborough County, Florida	22 February 1971	ABS #4440 Woolfenden	adult male	G. W. Woolfenden and R. W. Schreiber 1974; Woolfenden, pers. comm.
St. George Island, Franklin County, Florida	9 July 1974	TTRS #3277	second-summer male	H. M. Stevenson 1975
Toytown Landfill, St. Petersburg, Pinellas County, Florida	26 February 1983	ABS #240 Hoffman	first-winter male	S. R. Patton, pers. comm.; G. W. Woolfenden, pers. comm.
Saddlebunch Keys, Monroe County, Florida	13 December 1987	ABS #257 Hoffman	adult female	G. W. Woolfenden, pers. comm.
near old mouth Mermentau River, Cameron Parish, Louisiana	25 September 1985	LSUMZ #126705	second-winter female	S. W. Cardiff, pers. comm.
near old mouth Mermentau River, Cameron Parish, Louisiana	6 October 1985	LSUMZ #126707	male, molting from third-summer to adult winter	S. W. Cardiff, pers. comm.
near old mouth Mermentau River, Cameron Parish, Louisiana	10 November 1985	LSUMZ #126706	female, adult summer, molting to winter	S. W. Cardiff, pers. comm.
Beauharnois Dam, Québec	3 December 1977	NMC #65883	adult female	M. Gosselin, pers. comm.
Nepean Dump, Ottawa, Ontario	20 October 1983	NMC #78726	adult male	M. Gosselin, pers. comm.
Nepean Dump, Ottawa, Ontario	21 October 1983	NMC #78727	adult female	M. Gosselin, pers. comm.
Nepean Dump, Ottawa, Ontario	28 October 1983	NMC #78728	adult female	M. Gosselin, pers. comm.
Nepean Dump, Ottawa, Ontario	1 November 1983	NMC #78729	adult male	M. Gosselin, pers. comm.
Nepean Dump, Ottawa, Ontario	8 November 1983	NMC #78734	adult male	M. Gosselin, pers. comm.
Nepean Dump, Ottawa, Ontario	15 November 1983	NMC #78735	adult male	M. Gosselin, pers. comm.
Nepean Dump, Ottawa, Ontario	30 November 1983	NMC #78736	adult female	M. Gosselin, pers. comm.
Nepean Dump, Ottawa, Ontario	24 April 1984	NMC #84184	adult male	M. Gosselin, pers. comm.
Nepean Dump, Ottawa, Ontario	26 September 1984	NMC #84185	adult male	M. Gosselin, pers. comm.
Nepean Dump, Ottawa, Ontario	4 October 1984	NMC #84186	adult male	M. Gosselin, pers. comm.
Nepean Dump, Ottawa, Ontario	22 October 1984	NMC #93831	adult male	M. Gosselin, pers. comm.
Lemon Creek, Juneau, Alaska	19 September 1990	UAM #5708	adult female	Gibson and Kessel 1992

Abbreviations: ABS = Archbold Biological Station, Lake Placid, Florida; AMNH = American Museum of Natural History, New York; BAM = Bermuda Aquarium, Museum; BSNS = Buffalo Society of Natural Sciences, Buffalo, New York; LSUMZ = Louisiana State University Museum of Natural Science, Baton Rouge; NMC = National Museum of Canada (Canadian Museum of Nature), Ottawa; TTRS = Tall Timbers Research Station, Tallahassee, Florida; UAM = University of Alaska Museum, Fairbanks; USNM = United States National Museum, Washington, D.C.; ZMA = Zoological Museum, University of Amsterdam, Amsterdam; ZMUC = Zoological Museum, University of Copenhagen.

All the specimens listed (except for the unknown identity of Florida specimens ABS#240 and ABS#257) have been identified as *graellsii*. Number 257, however, is also probably *graellsii* because its mantle, except for being less worn and not as brown, matches that of #4440 identified as *graellsii* by E. Eisenmann (G. E. Woolfenden, pers. comm.).

Lesser Black-backed Gull

L. f. fuscus (Figures 1–3). *Birds of the Western Palearctic* (Cramp and Simmons 1983) and the *Handbuch der Vögel Mitteleuropas* (Glutz von Blotzheim and Bauer 1982) also consider two Eurasian forms that Grant (1986) considers subspecies of the Herring Gull to be Lesser Black-backed Gulls—one of which may have occurred in North America. A specimen believed to be *L. argentatus taimyrensis* was taken in Alaska in 1921 (Bailey 1948). It is presumably the basis for the Alaska record of Lesser Black-backed Gull cited in the sixth edition of the *AOU Check-list*. The specimen needs to be reexamined. The other form, *L. a. heuglini*, has never been recorded in North America to our knowledge.

Although *intermedius* was first described in 1922, until fairly recently most authorities did not recognize it as a valid subspecies of *L. fuscus*. A reexamination of this question by Voous (1963), and especially by Barth (1966, 1967a, 1968, 1975a, 1975b), demonstrated the validity of *intermedius*. Differences among the three subspecies are based primarily on bill and wing length, mantle color, molt, and migration patterns. In all these characteristics, except back and wing color, *intermedius* and *graellsii* are more similar to each other than they are to *fuscus*. These and other differences, such as differences in feeding ecology, have led some authors to suggest that *fuscus* may be a distinct species (Strann and Vader 1992). Barth (1967b) also used egg dimensions

to distinguish among the subspecies. According to Rytman et al. (1978), however, this feature is of “limited” taxonomic value in this regard. Barth’s studies were largely overlooked at first, at least in North America. It was only with the publication of the books by Grant (1982, 1986) and Harrison (1983, 1985) that *intermedius* received wide recognition. If *fuscus* is elevated to specific status, then, if Sibley and Monroe (1993) are followed, *graellsii* and *intermedius* will be known as the “Dark-backed Gull” and *fuscus* will continue to be known as the Lesser Black-backed Gull.

It needs to be stressed that Barth’s work was based on specimens from the British Isles, the Faeroes, Finland, and Scandinavia, and on only two old specimens from the Netherlands. The latter were obtained when *graellsii* was a rare breeding bird in the Netherlands, and *intermedius* was only a visitor. In re-

cent years the Netherlands has been colonized by *graellsii* from the west and *intermedius* from the northeast (see Distribution and Migration in the Old World below), and large-scale interbreeding is blurring the distinction between the two forms (Figure 4). In fact, Spaans (1979) felt that interbreeding had progressed to the point where the subspecific identification of Dutch birds (described in Part II) was no longer possible.

Distribution and Migration in the Old World

L. f. graellsii breeds in the Faeroes and the British Isles. In the late 1920s, this subspecies colonized Iceland, recolonized France, and colonized the Netherlands and Germany. It was first found breeding in Denmark about 1940 (Olsen 1992) and in Portugal and northwestern Spain in the 1970s (Cramp and Simmons 1983). *L. f. intermedius*

TABLE 2
RECORDS OF LESSER BLACK-BACKED GULL IN ONTARIO

Year	Spring	Summer	Fall	Winter	Sum
1977	0	0	1	0	1
1978	0	0	2	0	2
1979	0	0	2	0	2
1980	0	0	8	0	8
1981	0	0	4	0	4
1982	3	0	5	8	16
1983	3	1	24	6	34
1984	7	1	25	6	39
1985	6	0	13	5	24
1986	13	1	25	8	47
1987	13	2	17	16	48
1988	22	9	29	13	73
1989	25	7	40	17	89
1990	24	4	26	19	73
1991	28	3	34	18	83
1992	20	6	39	27	92
1993	21	2	42	17	82
Totals	185	36	336	160	717

breeds in southern Norway, southwestern Sweden, and Denmark, and spread south to the Netherlands in the late 1960s (Rijsdijk 1968, Spaans 1979). *L. f. fuscus* breeds in northern Norway, southeastern Denmark, eastern Sweden, Finland, and northwestern Russia. Birds attributable to one subspecies occasionally breed within the range of another; birds whose mantle color is typical of *intermedius* have been found breeding in England, and all three subspecies have been found in the same breeding colony in Denmark (Barth 1966).

Recoveries of birds banded in Great Britain (Harris 1962, Baker 1980), the Faeroes (Preuss and Harild 1980, Jensen and Fritze 1991), Iceland and France (Cramp and Simmons 1983), and the Netherlands

(Speek and Speek 1984) show that *graellsii* winter mainly along the Atlantic coast of Iberia and northwestern Africa, extending south to Senegal, and occasionally to Sierra Leone and Nigeria. A few individuals are found in the western Mediterranean as far east as Italy and Tunisia.

From their breeding grounds in Scandinavia, *intermedius* migrate south, overland, across continental Europe to the Mediterranean (Preuss and Harild 1980), or southwest, to winter in the same areas as *graellsii* (Edelstam and Ramel 1956, Glutz von Blotzheim and Bauer 1982, Kvinnesland and Munkejord 1984). It is also the most abundant subspecies in southeastern England dur-

(Edelstam and Ramel 1956, Preuss and Harild 1980, Glutz von Blotzheim and Bauer 1982, Kilpi and Saurola 1984). Most birds continue to the Persian Gulf and to the Arabian and Red seas. Some individuals continue south to Mozambique (Urban et al. 1986) and occasionally south to Natal and the Transvaal in South Africa.

Many nominate *fuscus* migrate down the Nile and Rift valleys as far as Zambia and Malawi, to winter on East African lakes. Some move west from the Rift Valley as far as western Zaire. Banded birds recovered from the West African coast presumably arrived via this route rather than south along the Atlantic coast of northwestern Africa. Movement of *L. f. fuscus* to the west and southwest is excep-



RICHARD BOWEN

Figure 5. An apparent *intermedius* Lesser Black-backed Gull at the Pompano Landfill, Broward County, Florida, 10 March 1990. This represents one of only a few documented records of this subspecies for North America. Note the even blackish color of the back and wings, and the contrast with the black primaries.

ing the non-breeding season (Davenport 1985).

Nominate *fuscus* migrates overland from its breeding grounds to the south and southwest, across central and eastern Europe to the Black and Caspian seas, and to the Mediterranean as far west as Italy and Algeria

tional. Through 1978, for example, there had been only five recoveries of *fuscus* from the Netherlands (de Heer 1981). Furthermore, some of these birds, which were banded as chicks in mixed colonies, may have been misidentified Herring Gulls (see Voous 1963).

Lesser Black-backed Gull

The populations of both *graellsii* (Cramp and Simmons 1983) and *intermedius* (Røv 1986) have generally increased in recent years, while that of *fuscus* has greatly declined throughout its range. *L. f. fuscus* is now generally considered threatened in northern Norway (Strann and Vader 1992). A 1986 report mentions only about 500 pairs breeding in Finland compared to 1800 pairs in the 1950s (European News, 1986), and the total Swedish population, which was estimated at about 17,000 pairs in the late seventies, had dwindled to about 4000–5000 pairs in 1990 (T. Tyrberg, pers. comm.).

On the basis of population, breeding distribution, and migratory patterns, we would expect *graellsii* to occur in North America, with perhaps some *intermedius*. In contrast, *fuscus* would be extremely rare, if it occurred at all.

Distribution in the New World

For more than thirty years the common wisdom has been that all Lesser Black-backed Gulls seen in North America are members of the subspecies *graellsii*. This assumption is supported by the fact that all of the North American specimens identified to subspecies have been *graellsii* (Table 1). Although the vast majority of sight records has also involved *graellsii*, there is evidence that *intermedius* has also occurred (Figure 5 and front cover; see also Part II).

Intriguingly and paradoxically, six of the seven initial sight records from 1934 to 1940 were reported to be *fuscus* (Edwards 1935, Sprunt 1938, Elliott 1940, Cruickshank 1942). Only one of these birds was assigned to *graell-*

sii (Kuerzi and Kuerzi 1935)! Because *intermedius* was not generally recognized at the time, and this is the more likely of the Scandinavian forms to occur in North America, we believe that these birds were possibly *intermedius*, although the Florida bird could have been *fuscus*. The backs or mantles of three of these individuals were reported to match those of the Great Black-backed Gulls they were with (Edwards 1935, Elliott 1940), a description that strongly supports *intermedius*.

Dark-mantled Lesser Black-backed Gulls reported to be the subspecies *fuscus* are occasionally seen in eastern North America (see Part II). Most, if not all of these, are probably *intermedius* or Dutch intergrades. Of the eighty or so Lesser Black-backed Gulls seen by the second author in the Carolinas, two were almost certainly *intermedius* (Lewis 1980, Tove 1989). Of the sixty-three observed by Bruce Peterjohn in Ohio, only one exhibited characteristics of *intermedius* (B. G. Peterjohn, pers. comm.).

It is useful to look at the ratio of *graellsii* to *intermedius* Lesser Black-backed Gulls wintering in southern Portugal, which has the same latitude as southern Virginia. The second author's field work there during two winters indicates *graellsii* outnumbers *intermedius* by at least one hundred to one. Assuming that in a typical winter there are a few hundred Lesser Black-backed Gulls in eastern North America and that most of them come from Western Europe, then, extrapolating from the Portugal figures, it might be reasonable to expect a few *intermedius* among them.

At present there is no conclusive evidence that nominate *fuscus* has occurred in the New World. Although *fuscus* migrates to the south and southeast from its breeding grounds, it is possible that a bird that had crossed from East Africa to the Gulf of Guinea could continue west to the New World. The recent substantial decline in the numbers of this subspecies, however, make the likelihood of this happening slim.

The subspecies *graellsii* expanded its breeding range to Iceland between 1920 and 1930 (Gudmundsson 1955) and is apparently still increasing there. Thus, it has generally been assumed that all the Lesser Black-backed Gulls that occur in North America originate in Iceland (e.g., Cramp and Simmons 1983). This belief, of course, ignores sight-record and photographic evidence that birds of the Scandinavian subspecies *intermedius* have occurred in North America, and the possible existence of one or more breeding populations of *graellsii* in northern Canada. The first North American records from Greenland were in 1850 and 1920, before the species was known to breed in Iceland, and the one New World banding recovery, also from Greenland, was of a bird hatched on the Faeroes (Salomonsen 1967, 1971; Table 1).

If Lesser Black-backed Gulls are breeding in the New World, numbers have to be substantial to account for the number of individuals seen here. Could a substantial number of Lesser Black-backed Gulls be breeding in the vast expanse of the far north? Thus far, the only confirmed

breeding of this species in North America consists of single pairs in Greenland in 1990, 1991, and 1992, with others suspected, including at least eight additional pairs in 1992 (Boertmann 1994), and a bird mated to a Herring Gull found breeding in southeastern Alaska in 1993 (van Vliet et al. 1993). A juvenal-plumaged Lesser Black-backed Gull at Long Point, Ontario, on the early date of 28 July (Ridout 1993) may have been hatched in North America. The appearance of other juveniles as early as 18 August in southern Ontario (Weir 1989) and 6 September in Massachusetts (S. Perkins, pers. comm.) does not prove breeding in North America, because there are large numbers of fully fledged juveniles in the Netherlands by 15 July, and birds of the year banded in Britain have been recovered in Spain and Portugal during August.

A more thorough analysis of distribution based on past and future New World Lesser Black-backed Gull records would be valuable. Unfortunately, but perhaps inevitably, attending the increase of reports in Lesser Black-backed Gulls in recent years has been a lessening of interest in the species. There exists an almost "ho-hum another Lesser" attitude. We submit that this is a serious error. Every effort should be made to assess the subspecific and changing status of this species in the New World. The increase in numbers presents an opportunity to critically identify the distribution and movements of a fascinating species as it possibly colonizes another continent.

References

Alexander, H. G. 1946. Lesser Black-backed Gull in New York harbor. *Auk* 63: 258.

- Altman, A., and B. Swift. 1989. *Checklist of the Birds of South America*, 2d ed. Great Barrington, Massachusetts. Privately Printed.
- American Ornithologists' Union. 1983. *Check-list of North American Birds*. 6th ed.
- Amos, J. R. E. 1991. *A Guide to the Birds of Bermuda*. Pembroke, Bermuda: Bermuda Press.
- Armistead, H. T. 1992. Middle Atlantic Coast region. *American Birds* 46: 1129.
- Bailey, A. M. 1948. *Birds of Alaska*. Denver: Colorado Museum of Natural History.
- Baker, R. R. 1980. The significance of the Lesser Black-backed Gull to models of bird migration. *Bird Study* 27: 41–50.
- Barth, E. K. 1966. Mantle colour as a taxonomic feature in *Larus argentatus* and *Larus fuscus*. *Nytt Magasin for Zoologi* 13: 56–82.
- . 1967a. Standard body measurements in *Larus argentatus*, *L. fuscus*, *L. canus*, and *L. marinus*. *Nytt Magasin for Zoologi* 14: 7–83.
- . 1967b. Egg dimensions and laying dates of *Larus marinus*, *L. argentatus*, *L. fuscus* and *L. canus*. *Nytt Magasin for Zoologi* 15: 5–34.
- . 1968. The circumpolar systematics of *Larus argentatus* and *Larus fuscus*, with special reference to the Norwegian populations. *Nytt Magasin for Zoologi* 15 (supplement 1): 1–50.
- . 1975a. Moulting and taxonomy of the Herring Gull *Larus argentatus* and the Lesser Black-backed Gull *L. fuscus* in northwestern Europe. *Ibis* 117: 384–387.
- . 1975b. Taxonomy of *Larus argentatus* and *Larus fuscus* in north-western Europe. *Ornis Scandinavica* 6: 49–63.
- Beardslee, C. S., and H. D. Mitchell. 1965. Birds of the Niagara Frontier Region. *Bulletin of the Buffalo Society of Natural Sciences* No. 22.
- Binford, L. C. 1978. Lesser Black-backed Gull in California, with notes on field identification. *Western Birds* 9: 141–150.
- Boertmann, D. 1994. An annotated checklist of the birds of Greenland. *Meddelelser om Grønland, Bioscience* 38: 1–63.
- Brinkley, E. S., W. J. Boyle, Jr., R. O. Paxton, and D. A. Cutler. 1994. Middle Atlantic Coast region. *National Audubon Society Field Notes* 48: 185–192.
- Brock, K. J. 1979. Birdlife of the Michigan City area, Indiana. *Indiana Audubon Quarterly* 57: 94–113.
- Buckalew, J. H. 1950. Records from the Del-Mar-Va Peninsula. *Auk* 67: 250–252.
- Campbell, R. W. 1990. *The Birds of British Columbia*. v.2. Victoria: Royal British Columbia Museum.
- Cramp, S., and K. E. L. Simmons. eds. 1983. *The Birds of the Western Palearctic*. v.3. New York: Oxford University Press.
- Cruikshank, A. D. 1942. *Birds Around New York City*. New York: American Museum of Natural History.
- . ed. 1963. The sixty-third Christmas Bird Count. *Audubon Field Notes* 17: 61–296.
- Davenport, L. J. 1985. British status of northern Lesser Black-backed Gulls. *British Birds* 78: 668–669.
- de Heer, P. 1981. Over status van Baltische Kleine Mantelmeeuw in Nederland (On the status of the Baltic Lesser Black-backed Gull in the Netherlands). *Dutch Birding* 3: 55.
- DeSante, D., and P. Pyle. 1986. *Distributional Checklist of North American Birds*. v.1. Lee Vining, California: Artemisia Press.
- Devillers, P. 1979. Un Goéland brun (*Larus fuscus*) en Guyane française. *Gerfaut* 69: 79–80.
- Edelstam, C., and C. Ramel. 1956. *Fåglarnas Flyttning (The Migration of Birds)*. Stockholm: Norstedts.
- Edwards, J. L. 1935. The Lesser Black-backed Gull in New Jersey. *Auk* 52: 85.
- Elliott, J. 1940. Scandinavian Lesser Black-backed Gull on Long Island. *Proceedings of the Linnaean Society of New York* 50/51: 34–35.
- European News. 1986. *British Birds* 79: 284–292.
- French, R. 1991. *A Guide to the Birds of Trinidad and Tobago*. 4th ed. Ithaca: Cornell University Press.
- Gibson, D. D., and B. Kessel. 1992. Seventy-four new avian taxa documented in Alaska. *Condor* 94: 454–467.
- Glutz von Blotzheim, U. N., and K. M. Bauer. eds. 1982. *Handbuch der Vögel Mitteleuropas*. Band 8. Wiesbaden, Germany: Akademische Verlagsgesellschaft.
- Godfrey, W. E. 1986. *The Birds of Canada*. rev. ed. Ottawa: National Museums of Canada.
- Grant, P. J. 1982. *Gulls: A Guide to Identification*. Vermillion, South Dakota: Buteo Books.
- . 1986. *Gulls: A Guide to Identification*. 2d ed. Vermillion, South Dakota: Buteo Books.
- Gudmundsson, F. 1955. Íslenzkir fuglar XII. Sílamáfur (*Larus fuscus*) (Icelandic Birds XII. The Lesser Blackback (*Larus fuscus*)). *Náttúrufræðingurinn* 25: 215–226.
- Hall, G. A. 1993. Appalachian region. *American Birds* 47: 256–258.
- Harris, M. P. 1962. Migration of the British Lesser Black-backed Gull as shown by ringing data. *Bird Study* 9: 174–182.

Lesser Black-backed Gull

- Harrison, P. 1983. *Seabirds: An Identification Guide*. Boston: Houghton Mifflin.
- . 1985. *Seabirds: An Identification Guide*. rev. ed. Boston: Houghton Mifflin.
- Howell, S. N. G., and S. Webb, 1995. *A Guide to the Birds of Mexico and Northern Central America*. New York: Oxford University Press.
- Jensen, J.-K., and E. Fritze. 1991. Farøske Sildemågers (*Larus fuscus graellsii*) traek (The migration of Faeroes Lesser Black-backed Gulls (*Larus fuscus graellsii*)). *MTR Interne Meddelelser Til Zoologisk Museums Ringmaerkere* 90: 6–7.
- Kilpi, M., and P. Saurola. 1984. Migration and wintering strategies of juvenile and adult *Larus marinus*, *L. argentatus* and *L. fuscus* from Finland. *Ornis Fennica* 61: 1–8.
- Kingery, H. E. 1991. Mountain West region. *American Birds* 45: 296–299.
- Kuerzi, J., and R. Kuerzi. 1935. Occurrence of Lesser Black-backed Gull (*Larus fuscus graellsii* [sic]) in Bronx County, New York City. *Proceedings of the Linnaean Society of New York* 45/46: 101–102.
- Kvinneland, A., and A. Munkkjord. 1984. Sildemåkene fra Vestlandet trekker direkte over Nordsjøen (Lesser Black-backed Gulls from West Norway Migrate Across the North Sea). *Vår Fuglefauna* 7: 91–93.
- Langridge, H. P. 1993. Florida region. *American Birds* 47: 406–408.
- Le Baron, G. S. ed. 1993. The ninety-third Christmas Bird Count. *American Birds* 47: 473–1028.
- Lewis, B. 1980. Lesser Black-backed Gull in the Carolinas. *Chat* 44: 79–81.
- Martin, R. 1991. Northern Great Plains region. *American Birds* 45: 288–290.
- Mumford, R. E., and W. S. Rowc. 1963. The Lesser Black-backed Gull in Indiana. *Wilson Bulletin* 75: 93.
- Newall, J. G. 1984. A new bird for Oklahoma: Lesser Black-backed Gull. *Bulletin of the Oklahoma Ornithological Society* 17: 17–20.
- Norton, R. L. 1986. West Indies region. *American Birds* 40: 528–529.
- . 1988a. West Indies region. *American Birds* 42: 327–328.
- . 1988b. West Indies region. *American Birds* 42: 485–486.
- . 1994. West Indies region. *National Audubon Society Field Notes* 48: 252–254.
- Olsen, K. M. 1992. *Danmarks Fugle—en oversigt (Birds of Denmark—a checklist)*. Copenhagen: Dansk Ornithologisk Forening.
- Preuss, N. O., and P. A. Harild. 1980. *Fugle ringmaerket i Danmark 1964–1968 (Birds ringed in Denmark 1964–1968)*. Copenhagen: Copenhagen Zoological Museum.
- Raffaell, H. A. 1989. *A Guide to the Birds of Puerto Rico and the Virgin Islands*. rev. ed. Princeton: Princeton University Press.
- Ridout, R. 1993. Ontario region. *American Birds* 47: 1104–1106.
- Rijsdijk, K. 1968. Tweede bekende broedgeval van *Larus fuscus intermedius* in Nederland (Second known breeding occurrence of *Larus fuscus intermedius* in the Netherlands). *Limosa* 41: 153.
- Ryttman, H., H. Tegelström, and H. Jansson. 1978. Egg dimensions of Herring Gulls *Larus argentatus* and Lesser Black-backed Gulls *L. fuscus*. *Ibis* 120: 353–356.
- Røv, N. 1986. Bestandsforhold hos sildemåke (*Larus fuscus*) i Norge med hovedvekt på *L. f. fuscus* (The breeding population of Lesser Black-backed Gull *Larus fuscus* in Norway, with emphasis on *L. f. fuscus*). *Vår Fuglefauna* 9: 79–84.
- Salomonsen, F. 1967. *Fuglene på Grønland (The Birds of Greenland)*. Copenhagen: Rhodos. (For an English translation of the seabird chapters by R. G. B. Brown, see *The Seabirds of Greenland*. Canadian Wildlife Service Report No. 100, 1 June 1981.)
- . 1971. Recoveries in Greenland of birds ringed abroad. *Meddelelser om Grønland* 91: 1–52.
- Sibley, C. G., and B. L. Monroe, Jr. 1993. *A Supplement to Distribution and Taxonomy of Birds of the World*. New Haven: Yale University Press.
- Siddle, C. 1994. British Columbia/Yukon region. *American Birds* 48: 142–144.
- Silcock, W. R., and R. R. Roché. 1994. Winter field report, Dec 1993–Feb 1994. *Nebraska Bird Review* 62: 51–63.
- Small, A. 1994. *California Birds: Their Status and Distribution*. Vista, California: Ibis Publishing Company.
- Smith, N. G. 1982. Lesser Black-backed Gull in Panama. *American Birds* 36: 336–337.
- Spaans, A. L. 1979. Kleine Mantelmeeuw *Larus fuscus* (Lesser Black-backed Gull *Larus fuscus*). In: R. M. Teixeira, ed. *Atlas van de Nederlandse Broedvogels (Atlas of the Breeding Birds of the Netherlands)*. 's-Graveland, the Netherlands: Natuurmonumenten.
- Speck, B. J., and G. Speck. 1984. *Thieme's VogeltrekAtlas (Thieme's Atlas of Bird Migration)*. Zutphen, Netherlands: Thieme.
- Sprunt, A., Jr. 1938. Scandinavian Lesser Black-backed Gull at Key West, Florida. *Auk* 55: 671–672.
- Stedman, S. 1994. Central Southern region. *National Audubon Society Field Notes* 48: 215–218.
- Steullet, A. B., and E. A. Deautier. 1939. Sobre la Presencia de *Larus fuscus* y *Speotyto cunicularia juninensis* en la Argentina. *Notas del Museo de la Plata*, 4, *Zoología* No. 21: 245–249.
- Strann, K.-B., and W. Vader. 1992. The nominate Lesser Black-backed Gull *Larus fuscus fuscus*, a gull with a tern-like feeding biology, and its recent decrease in northern Norway. *Ardea* 80: 133–142.
- Stevenson, H. M. 1975. Lesser Black-backed Gull summering in Florida. *Florida Field Naturalist* 3: 22.
- Tove, M. 1989. Reappraisal of the status of gulls in the Carolinas. *Chat* 53: 53–63.
- Urban, E. K., C. H. Fry, and S. Keith. eds. 1986. *The Birds of Africa*. v.3. New York: Academic Press.
- van Vliet, G., B. Marshall, D. Craig, and J. Egolf. 1993. First record of nesting activity by a Lesser Black-backed Gull (*Larus fuscus*) in North America. *Pacific Seabird Group Bulletin* 20: 21.
- Voous, K. H. 1963. Geographic variation of *Larus fuscus* in northwestern Europe. *Ardea* 51: 16–24.
- . 1977. Northern gulls in Aruba, Netherlands Antilles. *Ardea* 65: 80–82.
- . 1983. *Birds of the Netherlands Antilles*. 2d ed. Zutphen, Netherlands: De Walburg Pers.
- Voous, K. H., and H. J. Koelers. 1967. Check-list of the birds of St. Martin, Saba, and St. Eustatius. *Ardea* 55: 115–137.
- Webb, B. E., and J. A. Conry. 1978. First record of a Lesser Black-backed Gull in Colorado. *Western Birds* 9: 171–173.
- Weir, R. D. 1989. Ontario region. *American Birds* 43: 94–99.
- White, A. 1990. *List of North American Birds*. Bethesda, Maryland: Bird Commander.
- Woolfenden, G. E., and R. W. Schreiber. 1974. Lesser Black-backed Gulls in Florida. *Florida Field Naturalist* 2: 20–21.

Figure 1. A definitive basic (winter) plumaged L. f. graellsii with Herring Gulls for comparison at the Chesapeake Bay Bridge and Tunnel, Virginia, 26 October 1985. Note the back and wing color and large white primary tips. The amount of head streaking is less than in most basic-plumaged graellsii.



DANIEL R. HEATHCOATE

Figure 2. Typical example of L. f. fuscus taken on the wintering grounds at Eilat, Israel, Spring 1988. Note the even blackish color of the back and wings, small white primary tips, relatively long wings, and slender bill.



HADORAM SHIRIHAI

Figure 3. Adult L. f. intermedius (left) with L. f. graellsii and Yellow-legged Gulls (L. cachinnans; upper right) for comparison, photographed at Lagos, Portugal, 9 January 1994. Note the length of the wing extension beyond the tail (the fourth primary tip is in line with the tip of the tail). Compare the wing length and dark even color of the back and wings with that of the accompanying graellsii.



ROBERT H. LEWIS

Lesser Black-backed Gull in the Americas

Occurrence and Subspecific Identity

Part II: Field Identification

**PETER W. POST * and
ROBERT H. LEWIS †**

IN PART I, WE PRESENTED an overview of the taxonomy of the Lesser Black-backed Gull (*Larus fuscus*) and provided a historical synopsis of its occurrence in North America. The field identification of Lesser Black-backed Gulls is discussed by many authors, including Binford (1978), Glutz von Blotzheim and Bauer (1982), Cramp and Simmons (1983), Harrison (1983), Bruns (1983, 1988), Grant (1986), Urban et al. (1986), and De Schutter (1989). Identification of the three subspecies is discussed in detail by Cramp and Simmons (1983) and Grant (1986). The following discussion is based on these sources, examination of museum skins, and field experience in North America, Europe, and elsewhere.

We assume reader familiarity with the four-year sequence of plumages of large *Larus* gulls. The basics are covered in Grant (1986) and Wilds (1989). We de-

scribe adult birds—those in definitive (fourth or later) basic (winter) plumage—only, though many of our comments also apply to third basic and to third and definitive alternate (breeding) plumages. Younger birds are presumably not identifiable as to subspecies until adult coloration begins to show on the mantle and scapulars in second basic (second-winter) and second alternate (second-summer) plumages.

General Characteristics

In a distant mixed flock of Great Black-backed (*L. marinus*) and Herring (*L. argentatus*) gulls, adult Lesser Black-backed Gulls appear somewhat similar to the Great Black-backed Gulls in back and wing color. As one gets closer to the birds, the paleness of *L. f. graellsii* becomes more obvious. In size Lessers are the same or (usually) smaller than Herring Gulls. When seen in flight from below, the primaries and secondaries of adult *L. fuscus* (of all subspecies) are dusky gray, as in Great Black-backed Gulls. The grayness of the lower surface of these feathers contrasts with the white of the underwing coverts.

In winter, *graellsii* and *intermedius* generally stand out from

Great Black-backed Gulls because of their more extensive dark head markings. And Lesser Black-backed Gulls are more like Iceland Gulls (*L. glaucooides*) in body proportions and wing length, having slender bodies and relatively long and slender wings.

Adult Lesser Black-backed Gulls have a red orbital ring and a pale yellow iris, as do Great Black-backed Gulls. Adult Lesser Black-backed Gulls, however, have yellow legs and feet, which vary individually and seasonally in brightness; they can even be bright orange at the beginning of the breeding season. Some individuals have legs and feet that have been described as fleshy, grayish, or cream. One must be careful, however, when dealing with the colors of soft parts, especially with “apparent” adults that actually may be “advanced” three-year-olds or “retarded” four-year-olds. Great Black-backed Gulls with yellow feet (Barth 1968) or orange legs (van Kreuningen 1980, de Heer 1981) have been reported from Europe. A small black-backed gull with yellow legs reported from South Portland, Maine, in 1985, and identified as a Lesser

* 141 West 73rd Street, New York, New York 10023-2917

† Department of Mathematics, Fordham University, Bronx, New York 10458
(e-mail: rlewis@murray.fordham.edu)

Lesser Black-backed Gull

Black-backed Gull, appears from the photographs to be a Great Black-backed Gull. Another Great Black-backed with yellowish legs was reported from Virginia Beach, Virginia, in February 1995.

Although the back and wings of Lesser Black-backed Gulls vary in the degree and shade of black or gray, they are always noticeably darker than those of Herring Gulls. Thus, Lessers stand out as "black-backed gulls." They are easily distinguished from Great Black-backed Gulls by their overall shape, body size, bill, and usually yellow legs. The bill of the Lesser Black-backed Gull is slender with a sharp gonydeal angle, like that of a Herring Gull, and unlike the deep massive bill and bulbous gonydeal angle of the Great Black-backed Gull. The Lesser's bill is also generally more brightly colored, and the red spot at the gonys is typically more oblong in shape (Figure 1).

Depictions in the Literature

Lesser Black-backed Gulls have been frequently misrepresented in field guides and other bird books. The main problem has been the depiction or description of the shade of mantle color as too dark or too light. Among recent illustrations, the depictions of *L. f. graellsii* on page 155 of the *National Geographic Society's Field Guide to the Birds of North America* (1983, 1987) and on plate 37 of *The Birds of Canada* (Godfrey 1986) are excellent, although the latter de-

picts a pale individual. Both books imply, however, that there are only two subspecies and depict only one, as do other guides (e.g., Farrand 1983), which only adds to the confusion. Plate 59 in Harrison (1983) is another fine illustration of *graellsii*. Photograph number 455 in Harrison (1987) of an adult in flight, if, indeed, it is a Lesser Black-backed Gull, is an astonishingly pale individual. Harrison (1983, 1985) is the only one of these four guides to illustrate *L. f. fuscus*.

The painting of a breeding adult *L. f. fuscus* (Plate 82, Figure 5) in Cramp and Simmons (1983) is accurate, except that the mantle should be slightly blacker. As pointed out by Davenport (1985), however, the non-breeding adult *intermedius* (Plate 82, Figure 6) is not representative of this subspecies. It is much too pale, and we believe it is more typical of *graellsii*, as are the two subspecifically unidentified adults depicted in flight on Plate 81. Further, all the adults pictured on Plate 82 look too much alike in bill and body proportions.

The many photos in Grant (1986), though in black and white, are excellent. Note that numbers 264 and 269 depict *L. f. intermedius* and *L. cachinnans* (Yellow-legged Gull). Number 268, which shows an example of *L. f. graellsii* also next to a Yellow-legged Gull, is underexposed. Both birds are too dark. This is a prime example of the problems one encounters when trying to judge shades of gray from photographs.

Coloration of Upperparts

L. f. graellsii is the lightest of the three forms. Obviously much darker-mantled than the North American form of Herring Gull (*L. a. smithsonianus*; Figure 1), darker than California Gull (*L. californicus*), but much paler than Great Black-backed Gull, it does appear to be a "black-backed" gull in the field under most light conditions. The mantle and wings are a dull smoky gray or ash gray rather than blackish, with obvious contrast between the black wing-tip and the remainder of the wing and back. Some lighter-colored birds resemble the shade of gray of a Laughing Gull (*L. atricilla*).

L. f. fuscus is the darkest of the three forms (Figure 2). Both Grant (1986) and Cramp and Simmons (1983) state that the back and wings of *fuscus* are as black or blacker than that of Great Black-backed Gull, showing "hardly any" contrast with the black wing-tip. Harrison (1985) states that the "mantle, scapulars, back and upper wings [of *fuscus* are] almost (emphasis ours) black (as in [the] Great Black-backed Gull . . .)" Reflection measurements clearly show, however, that the mantle color of *fuscus* from northern Norway and the Baltic is markedly (emphasis ours) darker than that of Great Black-backed Gull, whereas that of *intermedius* from southern Norway is slightly lighter than that of Great Black-backed (Barth 1966). Indeed, the examples of *fuscus* the senior author saw breeding in southeastern Sweden



RICHARD BOWEN

Figure 4. An apparent *L. f. intermedius* (right) with a *L. f. graellsii* (left) and Herring Gulls for comparison, photographed at the Pompano Landfill, Broward County, Florida, on 10 March 1990. Note in these two examples of *L. fuscus* the difference in the back and wing color, and the contrast between the black primaries and the remainder of the wing. Both birds have yellow legs. The smaller bill and body size and rounder head shape of the *graellsii* indicate it is probably a female, whereas the larger bill and body size and more angular head shape of the *intermedius* indicate it is probably a male. The small white primary tips in the *graellsii* are the result of wear.

were all noticeably blacker than the Great Black-backed Gulls they were with. All of the Finnish, Swedish, and Norwegian ornithologists and birders with whom we have talked and corresponded agree that this is the case throughout its range. It should also be noted that the color of the upperparts of Great Black-backed Gulls does not show geographic variation; we were unable to detect differences among museum specimens from New York, England, and Scandinavia.

L. f. intermedius (Figures 3 and 4) may represent an intergrade population between *graellsii* and *fuscus*. It shows the greatest individual variation in mantle color among the three subspecies (Barth 1966). It needs to be stressed that Barth (1966, 1975b) found some overlap in mantle color, albeit slight, between *graellsii* and *intermedius* and between *intermedius* and *fuscus*.

The back and wings of *L. f. intermedius* are blackish, varying from slightly to clearly paler than Great Black-backed Gulls,

although many *intermedius* from Denmark and southwestern Sweden are fully as dark as Great Black-backed Gulls (Barth 1966). They do not look grayish as in *graellsii*. The contrast between the black wing-tip and the remainder of the wing is more pronounced than in *fuscus*. The difference in upperpart color between *intermedius* and *fuscus* is most evident on the upper back (mantle). *L. f. intermedius* and especially *L. f. fuscus* often show a brownish cast to the back and wings (Figure 5), as does *L. marinus*, a result of fading that can best be seen during molt as a contrast between fresh and old feathers. Indeed, *fuscus* means brown in Latin.†

The situation is further complicated by large numbers of Dutch intergrades. Since about 1960, for example, a large colony of Lesser Black-backed Gulls has formed in the industrial and port areas west of Rotterdam, especially on a man-made peninsula

† "Graellsii" does not mean gray. It refers to a Portuguese duke.

Lesser Black-backed Gull



HADORAM SHIRIHAI

Figure 5. Same adult *L. f. fuscus* as shown in Figure 2, here showing the relationship between feather wear and the brown color of the back and wings, which can be so pronounced in *fuscus*. Those feathers showing the most wear are brown, whereas those feathers on the mantle with the least amount of wear are grayer.



ANTHONY F. AMOS

Figure 6. This bird, photographed at Mustang Island, Nueces County, Texas, on 14 March 1984, is possibly an intergrade of the type breeding in the Netherlands. It is apparently not quite dark enough to be *intermedius*, though too dark to be *graellsii*. It is hard to see which primary tip falls opposite the end of the tail, though the white primary tips themselves are small.

called Maasvlakte. From about 2000 pairs of Lesser Black-backed Gulls in 1983 the population has exploded to its present (1994) size of about 20,000 pairs (P. de Knijff, pers. comm.). The colony contains both *graellsii* and *inter-*

medius, often in mixed pairs.

This situation is typical of the entire Dutch population of Lesser Black-backed Gull, which is currently estimated to consist of 40,000 to 60,000 pairs (P. de Knijff, pers. comm.). Most of the birds resemble the one shown in Figure 4, Part I, taken at Maasvlakte, falling between the classic *graellsii* (Figure 3, Part I) and *intermedius* (Figure 2, Part I) in mantle color. The bird in Figure 6 also seems to be of this type.

Furthermore, in eastern England, where Figure 7 was taken, there are another estimated 20,000 breeding pairs of Lesser Black-backed Gulls that have the same shades of gray back and wings as most of those Lesser Black-backed Gulls found breeding in the Netherlands (P. de Knijff, pers. comm.). This finding means that there is a large population of Lesser Black-backed Gulls that do not fall within the range of mantle color variation of either *graellsii* or *intermedius* as described by Barth. Lesser Black-backed Gulls breed-

ing all along the North Sea coast need to be studied with modern biostatistical techniques. Birds breeding in western Jutland (Denmark), may, for example, also be intergrades between *graellsii* and *intermedius* (Olsen 1992).

Wing Pattern

In this paper we follow Grant (1986) in ignoring the vestigial outermost primary and numbering the primaries inward from the outermost large (first) primary to the innermost (tenth) primary.

L. f. graellsii generally shows a larger white mirror and larger white tip on the outermost primary than do *intermedius* and *fuscus*. Although there may be some overlap, *intermedius* and *fuscus* generally show only one small white mirror and a very small white tip to the outermost primary (Figures 8 and 9). In a study of museum specimens, Hario (1986) found that the white mirror of the first primary extended into the white feather tip in 18 percent of *graellsii* (n=40) and 14 percent of *intermedius* (n=42), but in only 3 percent of *fuscus* (n=37). Although Grant (1986) stated that *graellsii* also usually (emphasis ours) has a mirror on the second primary where *fuscus* has none, Hario (1986), in the series he examined, found only 51 percent of *graellsii* to have a mirror on the second primary compared to 30 percent of *intermedius* and 22 percent of *fuscus*. It is not uncommon to see *fuscus* with no mirrors at all, especially in individuals with extensive feather wear.



ROGER TIDMAN

Figure 7. This is a very dark *graellsii*, or probably a Dutch intergrade type, photographed at Norfolk, England, April 1992. Note the large white primary tips, which are characteristic of *graellsii*. Compare with Figure 4, Part I, and with Figure 15.



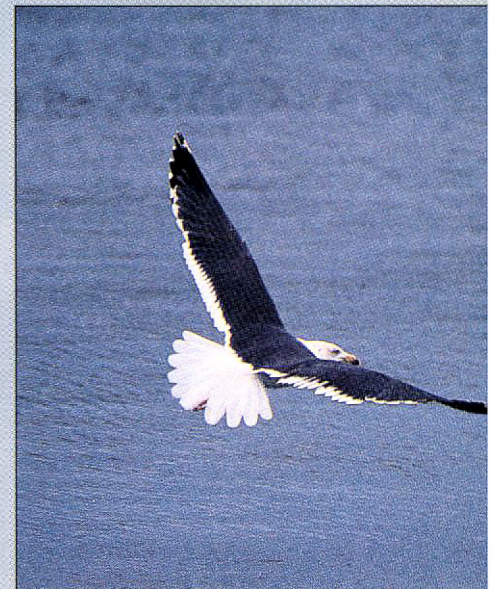
URBAN OLSSON

Figure 8. *L. f. fuscus* in flight, photographed in Helsinki, Finland, 11 June, showing the relative lack of contrast between the primaries and the remainder of the wing (this contrast is further reduced in this photograph because of the bright sunlight), the single white mirror on the outermost primary, and the relatively long and slender bill.



ROBERT H. LEWIS

Figures 9. *L. f. intermedius* with wings outstretched, at Lagos, Portugal, 9 January 1994. Note how the black of the primaries blends imperceptibly into the mantle color. The small white primary tips are visible, as is the single primary mirror, found on only the outermost primary. The bird to the right is a *graellsii* or a Dutch intergrade.



ROBERT H. LEWIS

Figure 10. Photograph of *L. f. graellsii*, at Lagos, Portugal, 9 January 1994, illustrating the wing pattern. Note the sharp, but zigzag, demarcation between the black portion of the primaries and the remainder of the wing and back.

Lesser Black-backed Gull



ROBERT H. LEWIS

Figure 11. A close-up of the *intermedius* shown in Figures 3 and 9, photographed 9 January 1994 at Lagos, Portugal. Compare this photograph with the birds pictured in Figures 7 and 15. All three are relatively dark birds, but this bird is not as gray; it is blacker. Also compare the size of the unworn white primary tips and the length of the wings in the three birds. In this bird, the wings are extremely long, and the end of the tail reaches the tip of the fourth primary. In the birds pictured in Figures 7 and 15 the unworn white primary tips are larger, and the tip of the tail reaches, or is near, the white tip of the third primary.



GREG W. LASLEY

Figure 12. A typical definitive basic (winter) plumaged *graellsii*, photographed at Mustang Island, Nueces County, Texas, on 14 February 1980. Note the gray back and wing color, large white primary tips with the end of the tail falling between the third and fourth tips, and heavily streaked head.

When seen well in flight from above, *graellsii* usually shows sharp contrast between the black of the primaries and the gray of the remainder of the wing and mantle. There is a clear line of demarcation (often zigzagged) between these two areas (Figure 10). Not all *graellsii* show this character, however, and it is often difficult to see clearly. Sometimes the sharp demarcation is visible only on one or two primaries. Freshness of plumage may be a factor. In flight, *intermedius* and *fuscus* never show any line of demarcation. On perched birds, however, the contrast between the black tips of the outer primaries and the rest of the wing in *intermedius* and *fuscus* is evident. When the wing is closed, the proximal portions of the primaries are hidden by other feathers. The white boundary between these areas, formed by the white tips of the secondaries and the tertial-crescent, may add to this perception of contrast (see "Coloration of Upperparts" above).

On fully adult (definitive basic) birds in fresh plumage seen perched from the side, the white tips of the outermost primaries form a row of diamond-like-shaped spots resembling segments of a circle, which are smaller on *intermedius* and *fuscus* than on *graellsii* (Figures 11 and 12). But beware of worn or abraded feathers! Primary molt in both *graellsii* and *intermedius* is usually complete by early December (*fuscus* takes a bit longer; Cramp and Simmons 1983), so the feathers are neat and fresh through the winter

gull-watching season. By May, however, the white primary tips are worn. See Figure 3, Part I, and Photo 286 in Grant (1986) for a *graellsii* showing small worn tips to the primaries.

Wing length provides another character for separating *graellsii* and *intermedius*. On a perched *intermedius*, the wings extend far enough beyond the tail so that the white tip of the fourth primary reaches, or extends beyond, the tip of the tail (Figures 3, 11, 13, and 14). In *graellsii*, the tip of the tail falls between the third and the fourth primary tip (Figure 12). The Dutch intergrades are most like *graellsii* in this feature (Figure 4, Part I; Figures 7 and 15), although some of the dark gray birds show the fourth tip in line with the end of the tail.

Head Streaking

The head in all three forms is white in definitive alternate plumage. In definitive basic plumage, the heads of *graellsii* and *intermedius* become extensively streaked and washed with dusky, particularly around the rear of the crown and the eye, and these markings may extend down across the lower throat and upper breast. *L. f. fuscus*, however, has a much whiter head. When streaks occur on the latter, they are restricted to the rear of the crown and hindneck. Post-breeding adult *graellsii* and *intermedius* generally acquire head streaking in September, nominate *fuscus* in October (Cramp and Simmons 1983). There is some indication that *intermedius* is usually less streaked



RICHARD BOWEN

Figure 13. Another apparent North American *intermedius* photographed at the Pompano Landfill, Pompano, Broward County, Florida on 10 March 1990, the same day as the *intermedius* pictured in Figure 4 and Figure 5, Part I. If we allow for the slight underexposure of this photograph, the mantle color is correct for *intermedius*. Also note the small size of the white primary tips, and the long wings that extend well beyond the tip of the tail.



PETER W. POST

Figure 14. Another probable North American *L. f. intermedius*, at Point Lookout, Nassau County, New York, 28 September 1985 (immediately following Hurricane Gloria). Compare the size and shape of the Lesser Black-backed Gull with that of the Great Black-backed Gull and the Herring Gulls. Note the small size (probably a female), long wings and generally attenuated shape, thin long bill, and yellow legs. Although part of the wing is in shadow, there appears to be little contrast between the primaries and the rest of the wing. The mantle color, which is the same as that of the accompanying Great Black-backed, matches that of *intermedius* from the west coast of Sweden (Figure 2, Part I). The mantle of *fuscus* would be darker than that of a Great Black-backed Gull.



ROBERT H. LEWIS

Figure 15. This individual, photographed at Lagos, Portugal, 9 January 1994, is similar in color to the *graellsii* or intergrade taken on the breeding grounds in England shown in Figure 7. Compare the size of the unworn white primary tips of this bird with that of the *intermedius* shown in Figure 3. Note that only three primary tips extend clearly beyond the tail. Birds this dark are seen fairly regularly in North America; they are almost certainly not *intermedius*.

Lesser Black-backed Gull

than *graellsii* and that the streaks do not form a central smudge around the eye, but this needs corroboration. Occasionally, virtually unstreaked *graellsii* are seen in winter (R. H. Lewis, pers. obs.). From roughly January on, breeding-plumaged adults can be devoid of head streaks.

Structure

L. f. graellsii is the largest of the three forms. It also has the shortest wings and a relatively short and thick bill. *L. f. fuscus* is the smallest form on average (only 76 percent the weight of *graellsii*), has the longest wings, a slender bill, and proportionately longer legs. *L. f. intermedius* resembles *graellsii* in body proportions (averaging 87 percent the weight of *graellsii*), but has longer wings and a longer and more slender bill (Cramp and Simmons 1983). The measurements of *graellsii* and *intermedius* overlap, as do those of *intermedius* and *fuscus*. Some subtle jizz differences between *graellsii* and *intermedius* can be at least tentatively suggested. In addition to being a bit longer and a bit more slender in overall body proportions, the head of *intermedius* tends to be a bit rounder and the eye appears smaller and more centrally placed. (Caution: Within a given gull taxon, females average smaller and rounder headed than males.)

Hybrids

Hybrid Herring × Great Black-backed gulls and Herring × Lesser Black-backed gulls repre-

sent a possible source of confusion. Although these birds are extremely rare in nature, they do occur. Foxall (1979) summarized and described four known specimens and four sight records of gulls presumed to be *L. a. smithsonianus* × *L. marinus* hybrids from Ottawa, the lower Great Lakes, and New York, all seen or collected since 1959, pointing out possible confusion with *L. fuscus*, especially in poor light. In size and mantle color these birds were intermediate between the parent species. The legs were whitish or pale flesh in color, and the orbital-ring was various shades of yellow or bright red. (In full breeding condition, Herring Gulls have a yellow or yellow-orange orbital-ring; Lesser Black-backed have a red one.) Under ideal viewing conditions these hybrids can be told from Lesser Black-backed Gulls by their paler mantle, heavier bill, larger size, and orbital ring color (when yellow or orange), and a large white tip or mirror on the outermost primary.

Hybrids between Herring and *graellsii* Lesser Black-backed Gulls resulting from cross-fostering experiments in England and described by Harris et al. (1978) were morphologically intermediate between the two species. The two individuals observed in the field during the breeding season were separable from Herring and Lesser Black-backed when on the ground, but not in flight, by a gray mantle midway in color between the two species, pale yellow legs, and an orange-yellow orbital ring. There are a number of additional sight records of

probable Herring × Lesser Black-backed gulls along the east coast of the U.S.

Harris et al. (1978) believed that these hybrids could be confused in winter with individuals from one of the darker-backed Eurasian populations of Herring Gull. One such species, the Yellow-legged Gull (*L. cachinnans*), formerly considered by many authors to be a Herring Gull, but now generally considered to be a separate species, has recently been recorded in North America in Newfoundland, Québec, the Washington, D.C.–Maryland area (Wilds and Czaplak 1994), and, probably, in North Carolina.

As the common name implies, *cachinnans* also has yellow legs, but most populations are large robust birds with ash-gray mantles (less bluish-gray than Herring Gull, less brownish-gray than Lesser Black-backed) that are noticeably darker than a Herring Gull's, close to that of a California Gull, but not nearly as dark as that of *L. f. graellsii*. In mid-winter the head is unstreaked. From late summer to early winter there is some head streaking, usually most obvious before the streaking on Herring Gull and Lesser Black-backed Gull is fully developed. The species most closely resembles a Herring Gull. Confusion with a Lesser Black-backed Gull is unlikely (Figure 3; see also photograph in *Birding* 1994, 26: 322). The field identification of this species is discussed by Harris et al. (1989) and Wilds and Czaplak (1994).

Two probable hybrids be-

tween Herring and *intermedius* Lesser Black-backed gulls have been described by Hansen (1960) and Voous (1962). In both birds the mantle color matched “the lighter variants” of *L. f. graellsii*. They were large birds, and even in breeding condition had “flesh-colored” legs or “gray feet with a little yellow at the ankles and toes.” We know of no records of crosses between Herring and *fuscus* Lesser Black-backed gulls, and such birds are not likely to occur because of differences in breeding times between the two species (Barth 1968).

L. fuscus and *L. cachinnans michahellis* have recently extended their ranges, so that they now breed sympatrically in western France. Although mixed pairs have been reported (Yésou 1991), thus far no young are known to have been produced.

Identification from Photographs

Although “typical” individuals of the three forms of Lesser Black-backed Gull discussed in this paper can be distinguished in the field, the situation is complicated by intergradation between *graellsii* and *intermedius* and *intermedius* and *fuscus*. Furthermore, the color of the mantle varies with lighting conditions and the substrate upon which the bird is standing. With the sun behind the observer, the mantle looks darkest when the bird faces directly away. It is instructive and more than a bit unnerving to watch one’s suspected *intermedius* rotate itself into just another *graellsii*.

These variables are com-

pounded in photographs as a result of film type, age, and exposure. We have seen photographs of the same bird that appear to be *graellsii* in one frame but *intermedius* in another. Similarly, legs and feet that are yellow in life can appear flesh or pinkish in photographs (and in the field), especially in early-morning and evening light.

The two reports of *L. f. fuscus* [= *intermedius/fuscus*] published in *The Birds of Canada* (Godfrey 1986) illustrate some of the difficulties involved. “The Victoria Island photo was taken in low, near-midnight arctic sunlight and the yellow legs show as pink” (W. E. Godfrey, pers. comm.); the published description (Alsop and Jones 1973) is insufficient to identify it to subspecies. “The [photograph of the] Churchill bird is in black and white. It is dark enough for *fuscus* but the photographer thought it probably was *graellsii*” (W. E. Godfrey, pers. comm.). In general, individuals in some photographs can be safely identified to subspecies, particularly if other gull species appear in the same frame as a reference, and detailed field notes are available.

Summary

We review the range expansion and current distribution of the Lesser Black-backed Gull in the New World (Part I) and discuss the field identification of the three subspecies of Lesser Black-backed Gull—*graellsii*, *intermedius*, and *fuscus* (Part II). We offer criteria for differentiating the subspecies, although not

every individual can be identified in the field.

- *L. f. graellsii* have a grayish mantle that is clearly paler than that of any Great Black-backed Gull; it shows a marked contrast with the black of the outer primaries. (A bird with the same mantle color as a Great Black-backed cannot be *graellsii*.) *Graellsii* have a bill that is similar to that of a Herring Gull and, from about September through January or later, dusky head streaking. A perched adult in fresh plumage (definitive basic) shows medium to large white primary tips. The end of the tail falls between the third and fourth primaries, but usually closer to the third.
- *L. f. intermedius* have bill and body shapes similar to *graellsii*, but have a blackish mantle lighter than or equal to that of a Great Black-backed and showing some contrast with the black of the outer primaries. Winter head-streaking is similar in extent to *graellsii* but not as heavy. A perched adult bird in fresh plumage (definitive basic) shows very small white primary tips and wings extending well beyond the end of the tail, usually far enough to have the fourth primary tip opposite, or beyond, the end of the tail.
- A Lesser Black-backed Gull can be identified as *fuscus* only if it has a thin, long bill, a mantle darker than that of a Great Black-backed, wings showing little contrast with the black of the outer primaries, long pointed wings, only one small white mirror on the outermost primary, a small, slender body, relatively long legs, and virtually no head markings at any time of year.

Although the more than thirty specimens of *L. fuscus* collected in the New World have been identified as *graellsii*, we present evidence that *intermedius* occurs

Lesser Black-backed Gull

in North America (Cover Photo and Figure 5, Part I; Figures 4, 13 and 14, Part II). There is no conclusive evidence that *fuscus* has occurred on this side of the Atlantic. Because of a serious decline in its numbers, the probability of its occurring here in the future is very low.

The criteria used to separate the three subspecies of Lesser Black-backed Gull need to be refined. Perhaps comparisons between eye diameter and bill and wing length, which led to the development of objective criteria for the field identification of Glaucous (*L. hyperboreus*) and Iceland (*L. glaucoides*) gulls (Grant and Mullarney 1989), may prove useful with Lesser Black-backed Gull subspecies as well.

Acknowledgments

We thank the many photographers who trusted us with, and let us retain, their precious photographs for an inordinate amount of time, many of whom also provided valuable information: Kathy S. Adams, Anthony F. Amos, Robert L. Anderson, Brad Andres, Ulf Antonsson, Robert D. Barber, Paul Benham, Charles W. Brasfield, Richard Bowen, R. J. Chandler, John J. Christian, Clarence B. Diersing, Jr., Charles D. Duncan, Otto Frengen, James Granlund, Heinz Haberyan, Daniel R. Heathcote, Robert B. Janssen, Arnet Kvinnesland, the late Serge LaFrance, James E. Landing, Greg W. Lasley, Bruce Mactavish, Ian A. McLaren, Joseph B. Milosevich, Arthur Morris, Bob O'Brien, Urban Olsson, Kenneth C. Parkes, Kevin D. Powers, Ronald J. Ryel, Noah Sarat, Michel Savard, Ed and Jean Schulenberg, Robert L. Scully, John Shackford, the late Leonard A. Shelton, Hadoram Shirihai, Brian Taber, Roger Tidman, David Tomlinson, David Tipling, Jeffrey L. Walck, Claudia Wilds, and Alan Wormington. Milton Heiberg kindly lent the resources of his studio and gave of his expertise in duplicating slides.

For answering our requests for information and/or photographs we thank Allen B. Altman, Robert F. Andrlc, J. Phillip Angle, Paul J. Baicich, Stephen F. Bailey, Edvard K. Barth, Gordon Berkeley, Laurence C. Binford,

Nelly A. Bö, David Boertmann, Bill Bouton, Richard Bowen, Richard G. B. Brown, Steven W. Cardiff, Arthur R. Clark, Bruce M. Di Labio, Jon Dunn, Jon Fjeldså, A. D. Fox, Richard P. French, Daniel D. Gibson, U. N. Glutz von Blotzheim, Joseph A. Grzybowski, W. Earl Godfrey, Michel Gosselin, Øyvind Gjerde, Svein Haftorn, George A. Hall, Martti Hario, M. P. Harris, Roger Higson, J. P. Hubbard, the late M. E. Isleib, Kaj Kampp, Mikael Kilpi, Hugh Kingery, Nils Kjellén, Rudolf F. Koes, Rick Knight, Roger Kreba, David Lambeth, Lars Larsson, A. Maley, Phil Mattocks, Guy McCaskie, Brad Millen, Aanen Munkejord, Tito Narosky, Duane Nelson, John G. Newell, Max Parker, Stephen R. Patton, Simon Perkins, Bruce G. Peterjohn, Wayne R. Petersen, Galen L. Pittman, Niels Otto Preuss, Tineke G. Prins, Johannes Prüter, Robert L. Pyle, Ron Ridout, Tom Rogers, P. Sherrington, W. Ross Silcock, Ella Sorensen, Nils Røv, Karl-Birger Strann, Chris Siddle, Don Smith, Dave Stejskal, the late Henry M. Stevenson, Norman van Swelm, Peter Taylor, T. G. Tobias, Jr., John L. Tveten, Tommy Tyrberg, Gus van Vliet, K. H. Voous, Ron D. Weir, S. O. Williams, David B. Wingate, Glen E. Woolfenden, and Richard Yank.

For help in translating papers in foreign languages we thank U. N. Glutz von Blotzheim, Martti Hario, Peter Heereens, W. (Ted) Hoogendoorn, David Monk, Fritz Mueller, Gunnell Rydström, and Deborah Sudran.

We thank Nina Root and her staff at the American Museum of Natural History Library, especially Debra B. Colchamiro, Sarah F. Gramato, and Priscilla Watson, and staff at the New York Public Library, for their assistance. And, we thank Allison Andors, Helen Hays, and Mary LeCroy of the Department of Ornithology at the American Museum of Natural History for allowing us to examine specimens.

We also thank Per Alström, Edward S. Brinkley, Jon Dunn, W. (Ted) Hoogendoorn, and Peter de Knijff for reviewing early drafts of the manuscript; and Paul Lehman and Claudia Wilds for their editing, which resulted in many improvements.

Finally, the first author would like to thank Tomas Lundquist and Urban Olsson for their hospitality when he was in Sweden, and for showing him breeding colonies of *L. f. fuscus* and *L. f. intermedius*. The second author wishes to thank Ted Hoogendoorn, Peter de Knijff, and Norman van Swelm for their hospitality when he was in the Netherlands.

References

- Alsop, F. J. III, and E. T. Jones. 1973. The Lesser Black-backed Gull in the Canadian arctic. *Canadian Field-Naturalist* 87: 61–62.
- Barth, E. K. 1966. Mantle colour as a taxonomic feature in *Larus argentatus* and *Larus fuscus*. *Nytt Magasin for Zoologi* 13: 56–82.
- . 1968. The circumpolar systematics of *Larus argentatus* and *Larus fuscus* with special reference to the Norwegian populations. *Nytt Magasin for Zoologi* 15 (supplement 1): 1–50.
- . 1975b. Taxonomy of *Larus argentatus* and *Larus fuscus* in north-western Europe. *Ornis Scandinavica* 6: 49–63.
- Binford, L. C. 1978. Lesser Black-backed Gull in California, with notes on field identification. *Western Birds* 9: 141–150.
- Bruns, H. 1983. Heringmöwe (*Larus fuscus*) oder Mantelmöwe (*Larus marinus*). *Ornithologische Mitteilungen* 35: 311–315.
- . 1988. Zur feldornithologischen Unterscheidung unausgefärbter Heringmöwen (*Larus fuscus*) u. Mantelmöwen (*Larus marinus*). *Ornithologische Mitteilungen* 40: 215–220.
- Cramp, S., and K. E. L. Simmons, eds. 1983. *The Birds of the Western Palearctic*. v.3. New York: Oxford University Press.
- Davenport, L. J. 1985. British status of northern Lesser Black-backed Gulls. *British Birds* 78: 668–669.
- de Heer, P. 1981. On Great Black-backed Gull with orange legs. *Dutch Birding* 3: 9.
- De Schutter, G. 1989. L'identification des grands larides en Belgique. *Aves* 25: 76–106.
- Farrand, J., Jr. 1983. *The Audubon Society Master Guide to Birding*. v.2. New York: Alfred A. Knopf.
- Foxall, R. A. 1979. Presumed hybrids of the Herring Gull and the Great Black-backed Gull—a new problem of identification. *American Birds* 33: 838.
- Glutz von Blotzheim, U. N., and K. M. Bauer, eds. 1982. *Handbuch der Vögel Mitteleuropas*. Band 8. Wiesbaden, Germany: Akademische Verlagsgesellschaft.
- Godfrey, W. E. 1986. *The Birds of Canada*. rev. ed. Ottawa: National Museums of Canada.
- Grant, P. J. 1986. *Gulls: A Guide to Identification*. 2nd ed. Vermillion, South Dakota: Buteo Books.
- Grant, P., and K. Mullarney. 1989. *The New Approach to Identification*. Privately printed.
- Hansen, L. 1960. Krydsning mellem Sølvmåge (*Larus argentatus* Pont.) og Sildemåge (*Larus fuscus* L.) fundet ynglende sammen med en Sølvmåge. [Hybrid Herring Gull (*Larus argentatus*

- Pont.) and Lesser Black-backed Gull (*Larus fuscus* L.) found breeding with a Herring Gull]. *Dansk ornitologisk forenings Tidsskrifter* 54: 85–87.
- Hario, M. 1986. *Itämeren lokkilinnut määritys ja esiintyminen*. [Larids in the Baltic Sea—Identification and Occurrence]. Helsinki: Lintutieto Oy.
- Harris, M. P., C. Morley, and G. H. Green. 1978. Hybridization of Herring and Lesser Black-backed gulls in Britain. *Bird Study* 25: 161–166.
- Harris, A., L. Tucker, and K. Vinicombe. 1989. *The Macmillan Field Guide to Bird Identification*. London: The Macmillan Press.
- Harrison, P. 1983. *Seabirds: An Identification Guide*. Boston: Houghton Mifflin.
- . 1985. *Seabirds: An Identification Guide*. rev. ed. London: Croom Helm.
- . 1987. *A Field Guide to Seabirds of the World*. Lexington, Massachusetts: The Stephen Greene Press.
- National Geographic Society. 1983. *Field Guide to the Birds of North America*. Washington, D. C.: National Geographic Society.
- . 1987. *Field Guide to the Birds of North America*. 2d ed. Washington, D. C.: National Geographic Society.
- Olsen, K. M. 1992. *Danmarks Fugle—en oversigt*. [Birds of Denmark—a checklist]. Copenhagen: Dansk Ornitologisk Forening.
- Urban, E. K., C. H. Fry, and S. Keith, eds. 1986. *The Birds of Africa*. v.2. New York: Academic Press.
- van Kreuningen, J. 1980. Great Black-backed Gull *Larus marinus* with orange legs. *Dutch Birding* 2: 14.
- Voous, K. H. 1962. Another presumed hybrid of Lesser Black-backed Gull and Herring Gull in the Netherlands. *Ardea* 50: 171–172.
- Wilds, C. 1989. The terminology of plumage and molt. *Birding* 21: 148–153.
- Wilds, C., and D. Czaplak. 1994. Yellow-legged Gulls (*Larus cachinnans*) in North America. *Wilson Bulletin* 106: 344–356.
- Yésou, P. 1991. The sympatric breeding of *Larus fuscus*, *L. cachinnans* and *L. argentatus* in western France. *Ibis* 133: 256–263.