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Skuas on the Canadian tundra in 1999: relative occurrence of species, ages and colour phases

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Abstract

During the Swedish Tundra Ecology Expedition to northern Canada in 1999 the age and colour phase of Pomarine *S. pomarinus*, Arctic *S. parasiticus* and Long-tailed *S. longicaudus* Skuas were recorded along a transect across 72° longitude from Nuuk, Greenland in the east to Banks Island in the west. Pomarine Skua comprised 4% of the 302 recorded skuas, with 77% Long-tailed Skua and 19% Arctic Skua. Measured indices of lemming numbers were low in the whole visited region. A similar study in 1994 along the Russian tundra from the Kola Peninsula in the west to Wrangel Island in the east was made in a peak lemming year. This resulted in a total of 1587 skuas, with 52% Pomarine, 10% Arctic and 38% Long-tailed. The Arctic Skua occurred in fairly low densities all along both transects, but was absent from the most northerly sites. The much lower proportion of Pomarine compared to Long-tailed Skua in Canada may be explained by a higher proportion of Pomarines leaving the breeding areas early, since this species obviously did not breed at all this year. It is however possible that lemming peaks on the Canadian Islands are generally less pronounced in the lack of *Lemmus* species. This would mean that breeding conditions for Pomarine Skuas, being totally dependent on lemmings, are generally less favourable. No skuas in second year plumage were observed and a few immatures of the two smaller species were all recorded in Davis Strait, between Greenland and Baffin Island. This indicates that only a smaller proportion of younger non-breeders reach the breeding grounds. Compared to 25% dark Arctic Skuas in Nuuk, Greenland only 3% of the birds observed on the Canadian Islands were dark. The same total dominance of light birds seem to prevail among all solitarily nesting Arctic Skuas in the arctic region.

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Introduction

The genus *Stercorarius* contains three species with a large distribution in the northerly parts of the Northern Hemisphere. Breeding ranges overlap to a large extent. While the Arctic Skua *Stercorarius parasiticus* is wholly circumpolar, the Long-tailed Skua *S. longicaudus* is missing in Iceland. The Pomarine Skua *S. pomarinus* has a larger gap in the breeding range from Northeast Canada eastwards to the Kanin Peninsula in Russia. Arctic Skuas may breed in colonies, feeding as kleptoparasites at sea bird colonies. This species also occurs in more temperate regions further south. On the Arctic tundra, all three species often feed on lemmings, but they have somewhat different breeding strategies. The nomadic Pomarine Skua is highly dependent on lemmings and will only breed in areas where this prey is common. If conditions are favourable, it may nest in high densities (Cramp & Simmons 1983). The Long-tailed Skua is also usually dependent on lemmings. It normally returns to the same area each year, but will not breed if feeding conditions are poor (Andersson 1981). However, in later years some pairs in northern Sweden have produced young although there has been no general lemming peak since 1982! Arctic Skua show the highest site fidelity and usually nest in the same territory each year. It is less dependent on lemmings and may raise the young on other food (Cramp & Simmons 1983, Furness 1987). All three species may nest in the same area and thus compete for food resources. Interspecific aggression is common and they normally defend mutually exclusive territories (Pitelka et al.

1955, Maher 1974), although this was regarded as primarily anti-predator behaviour by Ryabitsev (1995). In contrast to other lemming predators, such as Rough-legged Buzzard *Buteo lagopus* and Snowy Owl *Nyctea scandiaca*, the skuas have a fixed clutch size of only two eggs. (Andersson 1976, Furness 1987).

All three species are long-distance migrants. Birds breeding on the Arctic tundra normally do not return until late May or June, and sometimes do not lay until early July. Non-breeders and failed breeders of all three species often start leaving the tundra by July.

Most studies of skuas have been done in a rather limited area. During the Swedish-Russian Tundra Ecology Expedition in 1994 I was able to record the occurrence of the three species of skuas along a transect of 140 degrees from the Kola Peninsula (40° E) in the west to Wrangel Island (180° E) in the east (Kjellén 1997). A comparable study was performed during the Swedish Expedition to Northern Canada in 1999.

Methods and study area

The 1999 expedition was organised by the Swedish Polar Research Secretariat and based on the Canadian icebreaker *Louis S. St-Laurent*. The ship left Nuuk on Greenland on 25 June, crossed Davis Strait and made a short stop in Iqualuit, the capital of the new Inuit territory. It then travelled west along the Northwest Passage reaching Tuktoyaktuk at the mouth of the Mackenzie River on 31 July (Figure 1). The expedition then returned via a more northerly route in August. Scientists were taken ashore by helicopter and normally established three small base camps. The visits ashore lasted between 5 and 36 h, but usually covered a 24-hour period. The material presented in this paper was collected during the first part of the expedition between 24 June and 31 July. It is supplemented with observations from the second leg made by other observers.

On board the ship, I made observations above the bridge whenever time and weather permitted. Species, age and phase of all observed skuas were noted as far as possible using criteria given by Olsen & Larsson (1997). Direction was recorded for migrating flocks. Ashore, I surveyed avian lemming predators, working together with Magnus Tannerfelt, who studied Arctic Fox *Alopex lagopus*. Supplementary information was supplied by Christer G. Wiklund on sites 4–9. The area covered at different stops varied, depending on topography and available time (Table 1). Each area was surveyed on foot, using binoculars when necessary. All observed skuas were recorded and if the birds were breeding nests were located. The

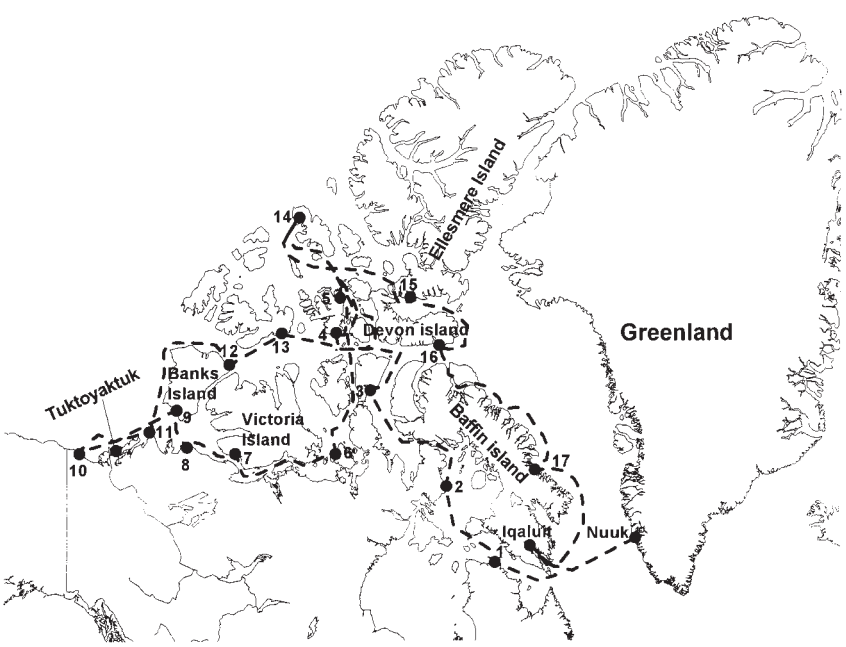

Figure 1. The route of the Swedish expedition Tundra Northwest in 1999.
Rutten för den svenska expeditionen Tundra Nordväst 1999.

census sites and dates of visit are listed in Table 1. All sites were within 10 km of the coast. They can be characterised as coastal tundra with only sparse vegetation cover. The landscape was usually rather flat featuring shallow wetlands and streams. The coordinates given were taken at the campsite with a GPS. Compared to the visited areas in Russia in 1994, the vegetation cover was generally more sparse and bird diversity lower on the Canadian sites.

One of the main projects of the expedition was to study how synchronised the lemming populations were along the tundra transect. Trapping by the lemming group resulted in the indices presented in Table 1 (Angerbjörn et al. 2000). These indices indicate the total number of microtines caught per 100 traps and 24 hours. The great majority of animals constituted of Collared Lemming *Dicrostonyx groenlandicus* except on site 8 where Tundra Vole *Microtus oeconomus* dominated. Index 0 means that no rodents were caught. Lack of time did not allow catching at site 5.

Results

The major difference compared to the expedition to arctic Russia in 1994 was the low lemming numbers (Table 1). On three sites no rodents at all were caught and the only higher figure, at Amundsen Gulf South, constituted almost exclusively of Tundra Voles. This is in great contrast to 1994, when microtine (=lemming) indices were in the order of 10–20 at most sites on the Russian tundra (Kjellén 1997). As a consequence the number of breeding skuas was generally very low in Northern Canada in 1999. It is especially interesting that the comparatively high number of Tundra Voles at site 8 did not attract any breeding skuas (Table 2).

In total 302 skuas were recorded, comprising 4% Pomarine, 19% Arctic and 77% Long-tailed Skuas (Table 2). In the table observed skuas are distributed on different sites and stretches of boat transport between the sites. In Pomarine Skua all observed birds were adults of light phase, while the few dark Arctic Skuas are listed in the table. In the same way subadults (3rd–4th calender year birds) are distinguished in the two smaller species. No skuas in their first summer plumage (2nd year) were observed during the expedition.

No Pomarine Skuas at all were seen on the visits ashore, and it is doubtful if the species bred at all in the region we visited this year. Instead the birds probably started to move south already during the summer and most birds seen from the ship were presumably on the way back to the wintering grounds on the southern oceans. To be able to complete the breeding they probably have to find a site with enough food (lemmings) by early July at the latest.

Small numbers of Arctic Skuas were observed from the boat as well as on four out of nine visited sites. Although no nests were found it is likely that most birds were breeding even in this poor lemming year, since Arctic Skuas have rather large hunting territories and take other prey like eggs and birds.

Even if Long-tailed Skuas were recorded on all sites except Amundsen Gulf South, they only showed signs of breeding on Melville Peninsula (2 nests found), Bathurst Island South (8 pairs with nest + 4 territorial pairs) and Banks Island (9 more or less

Table 1. Visited sites on the Tundra Expedition in 1999 with microtine index.
Besökta provytor (sites) under Tundraexpeditonen 1999 med smågnagarindex.

	Site Name	Latitude	Longitude	Date	Area (km^2)	Microt. index
	Nuuk, Greenland	64°52'N	51°30'W	24–25 Jun		
	Iqualuit, Baffin Is.	63°50'N	68°45'W	28–29 Jun		
1	Ungava Peninsula	62°22'N	73°42'W	1–2 Jul	14	0.2
2	Melville Peninsula	67°33'N	81°41'W	5–6 Jul	34	0.5
3	Somerset Island	72°54'N	93°30'W	9–10 Jul	78	0
4	Bathurst Island South	75°04'N	98°34'W	13–14 Jul	57	1.3
5	Bathurst Island North	76°25'N	97°40'W	16 Jul	8	–
6	King William Island	69°06'N	98°56'W	20–21 Jul	90	0.2
7	Wollaston Peninsula	69°23'N	114°57'W	23–24 Jul	56	0
8	Amundsen Gulf South	69°46'N	122°05'W	26–27 Jul	34	9.8
9	Banks Island South	71°43'N	123°43'W	28–29 Jul	51	1.5

territorial birds, no nests found). Long-tailed Skuas often desert the clutch if food conditions are bad (Furness 1987). Few recorded juveniles on the second half of the expedition (Green et al. 2000) and a number of dead young Arctic Foxes at Bathurst Island South indicate that the production of young was generally low due to a poor food supply. A total of 54 adults moving east in flocks South of Victoria Island on July 25 had probably already started the southward migration.

Discussion

Species distribution

In Arctic Russia in 1994, the densities of Arctic Skuas were comparatively low all along the transect. In total 10% of 1587 observed skuas belonged to this species (Kjellén 1997). Relative to the other two species, numbers were highest in the west and on the southernmost sites and Arctic Skuas were very scarce on the northernmost sites (northern Taymyr, New Siberian Islands and Wrangel Island), although lemmings were common there. In spite of Arctic Skuas comprising 19% of the observed skuas in 1999 (Table 2), they were recorded on less than half of the visited sites (Green et al. 2000). It was absent from the most northerly sites and only regarded as breeding at one site north of 70° N. Most likely food conditions generally are too unstable at more northerly places to suit a species normally breeding in the same territory year after year (Cramp & Simmons 1983, Furness 1987). Arctic Skuas nesting far north at Spitsbergen, primarily feed as kleptoparasites (Lovenskiold 1964). Otherwise the expeditions support a picture of a sparse distribution of this species around the lower Arctic region in areas where the skuas cannot depend on colonies of nesting seabirds. The comparatively higher proportion in Canada versus Russia is probably, at least partly, a result of many non-breeders in the two other species having left the region already before our visit.

In the lemming year 1994 Pomarine Skua was the most common skua on the Russian tundra with 52% of all recorded birds (Kjellén 1997). In sharp contrast only 11 Pomarine Skuas were seen during the first leg in 1999, comprising 4% of all skuas (Table 2).

Table 2. Numbers, proportions of dark phase and subadults in observed Pomarine, Arctic and Long-tailed Skuas at different sites and stretches on the Swedish Tundra Ecology Expedition to Northern Canada in 1999.
Antal samt procent mörk fas och subadulta bland bredstjärtad, vanlig och fjällabb observerade på den svenska Tundraexpeditonen till norra Kanada sommaren 1999.

Site	Pom. Skua	Arctic Skua	dark (%)	subad. (%)	Long-t. Skua	subad. (%)
Nuuk, Greenland	0	12	3 (25)	0	0	
Muuk-Iqualuit	0	9	1 (11)	2 (22)	12	3 (25)
Iqualuit-1	2	1	0	0	2	0
1. Ungava Peninsula	0	0			1	0
1–2	0	0			5	0
2. Melville Peninsula	0	2	0	0	7	0
2–3	2	16	0	0	47	0
3. Somerset Island	0	0			9	0
3–4	7	2	0	0	1	0
4. S. Bathurst Island	0	0			24	0
4–5	0	0			2	0
5. N. Bathurst Island	0	0			22	0
5-6	0	0			0	
6. King William Island	0	6	1 (17)	0	21	0
6–7	0	1	0	0	7	0
7. Wollaston Peninsula	0	5	0	0	6	0
7–8	0	0			54	0
8. Amundsen Gulf South	0	0			0	
9. Banks Island South	0	4	0	0	13	0
Total (302)	11	58	5 (12)	2 (5)	233	3 (2)
% of total	4	19			77	

Although a further 36 adults were observed from the ship on the second leg (Green et al. 2000) it was clearly much less frequent compared to Long-tailed Skua. It is possible that non-breeding Pomarines generally stay a shorter time on the breeding grounds compared to Long-tailed Skuas. Also our data from the visited sites show that a portion of Long-tailed at least initiated breeding in 1999, indicating that they are less dependent on high lemming numbers. However this does not seem enough to explain the markedly lower proportion of Pomarines in Canada. One clear difference is that on the majority of the Canadian Islands the only occurring lemming is Collared Lemming, while in northern Russia one species of the genus *Lemmus* is also present. In 1994 trapping of lemmings showed that the peaks were always dominated by lemmings of the genus *Lemmus* (Bublichenko 1995, Erlinge et al. 1995). Also at Yaibari field station on the Yamal Peninsula Siberian Lemming *L. sibiricus* was the dominant species in the years 1988–1993 (Ryabitsev 1995). I have found no published lemming or skua densities from the Canadian Islands. However in the peak year 1996 an area of 11.1 km^2 at Walker Bay, Victoria Island held 17 territorial pairs of Pomarine Skua (Deborah Wilson *in litt.*). It is possible that lemming peaks, only including Collared Lemming, on the Canadian Islands are not as pronounced as those in Arctic Russia and Alaska and that breeding conditions for Pomarine Skuas thus are generally less favourable. On the other hand we found numerous old traces of Snowy Owl breedings on several of the visited sites in 1999. This species has a similar nomadic behaviour as Pomarine Skua, only nesting if lemming densities are high enough. Although a number of Snowy Owls were observed during the exedition in 1999, no signs of breeding that summer was found.

During the 1999 expedition Long-tailed Skua dominated clearly with a total of 233 birds, comprising 77% of all observed skuas (Table 2). According to Dementev and Gladkov (1969) Long-tailed Skua is generally the commonest skua at high latitudes in Russia and this may well be true also in Canada. Furthermore the annual fluctuations in numbers seem to be less marked than in the nomadic Pomarine Skua (Cramp & Simmons 1983, Furness 1987). In 1994 more than twice as many Pomarine as Long-tailed Skuas were recorded among resident birds in Northern Russia with large local variation (Kjellén 1997). The data from that expedition indicated that the nomadic predators Pomarine Skua and Snowy Owl, primarily utilised the northernmost parts of the visited transect. In the smaller data set from Canada in a lemming low year there are no such trends.

Ages

Adults dominated completely in all three species (Table 2). The lack of second-year birds (one year old) during the expedition support the view that these normally do not return to the Arctic breeding grounds (Cramp & Simmons 1983, Furness 1987). According to Salomonsen (1967), second year Arctic Skuas do not reach Greenland, while there are eight ringing recoveries of third year birds. Apparently, large numbers of immature Arctic Skuas spend their first two years in pelagic waters (Cramp & Simmons 1983). It is thus interesting that all immature (third–fourth year) skuas on the expedition, two Arctic and three Long-tailed, were seen in Davis Strait between Greenland and Baffin Island. On this stretch there were also large numbers of presumably non-breeding Fulmars *Fulmarus glacialis*, larids and alcids, primarily Brünnich's Guillemot *Uria lomvia*, but also Little Auk *Alle alle*. In contrast only adult skuas were observed on the breeding grounds. Even if only three subadults of the two smaller species were recorded in Russia in 1994, in total 10% of the observed Pomarine Skuas were immatures (Kjellén 1997). In this species breeding by a few birds in subadult plumage during lemming years has been reported by Pitelka et al. (1955).

Phases

There seems to be no consistent geographical variation in the proportion of dark birds among Pomarine Skuas. Information on North American breeders reveal 4–8% dark birds (Manning et al. 1956, Frame 1973, Maher 1974) and no figure above 10% has ever been noted in Greenland waters (Boertmann 1994). In the large material from the Russian tundra 1994 there was no geographical variation and the recorded proportion of 8% dark phase seems to be representative of the whole Eurasian population (Kjellén 1997). Earlier published figures of over 10% dark birds (Southern 1944) are based on small samples and must be regarded as more uncertain. No dark Pomarine Skuas were seen in 1999 but this is hardly surprising considering that only 11 birds were counted (Table 2). Thus recent information suggest that the proportion of dark Pomarine Skuas is constant in the range of 4–10%, without any clear geographical variation.

The situation in Arctic Skua is quite different with

a more complex variation in the geographical distribution of colour phases. In general, the proportion of light birds increases towards higher latitudes (Southern 1943, O'Donald 1983, Furness 1987). The highest frequency of dark birds (96%) has been recorded in Finland (Hildén 1971). There is a marked difference between northern Norway, with the dark morph in majority, and Arctic Russia east of Novaya Zemlya, where dark birds are virtually unknown (Furness 1987). This abrupt change was clearly demonstrated by the data from the expedition in 1994. Of the birds observed on or outside the Kola Peninsula dark phase individuals constituted 64%, in marked contrast to only 3% among the Arctic Skuas from the Kola Peninsula in the west all the way to Wrangel Island in the east (Kjellén 1997). Although the material from 1999 is smaller it indicates a similar situation in Canada. Of 12 Arctic Skuas observed in Nuuk, Greenland 25% were dark (Table 2). One more dark bird was seen in Davis Strait between Greenland and Baffin Island. Later, during the passage of the Canadian Islands only one out of 27 Arctic Skuas was dark (Table 2). This is equivalent to 3%, perfectly matching the figure from Arctic Russia above. Obviously there is an almost total global dominance of light birds in the arctic region. The exceptions are areas where the skuas primarily feed as kleptoparasites, like Norway, Iceland and parts of Greenland. It has been suggested that dark birds should be better kleptoparasites since they are harder to discover against the sea, but this has so far not been supported by data (Furness 1987). The tundra skuas on the other hand are solitary nesters feeding on rodents, birds and insects within their large territory. Andersson & Götmark (1980) found food differences between solitary and colony nesters on the Varanger Peninsula. Thus dark birds can be presumed to be more efficient kleptoparasites, while light birds may be better hunters on the tundra.

No dark phase Long-tailed Skuas were observed during the expeditions, neither in 1994 nor in 1999. Apparently only two dark birds have ever been described. They originate from western Greenland and according to Boertmann (1994) both show subadult characters, although the central tail feathers are fully grown. It is doubtful if these two skins really merit the discernment of a dark phase in adult Long-tailed Skua.

While the two larger species are monotypic Long-tailed Skuas from North America and Greenland are distinguished as *S. l. pallescens*. These are separated from the nominate subspecies of Eurasia by more white on the underparts (Olsen & Larsson 1997). During the passage of Davis Strait 26–27 June two out of nine adult Long-tailed Skuas, showing a primarily grey underside, were regarded as belonging to the nominate subspecies. All other adults seen on the expedition showed characters of *pallescens.*

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Sammanfattning

Labbar på den kanadensiska tundran 1999: relativ förekomst av arter, åldrar och färgfaser

Under den svensk-ryska Tundraexpeditionen 1994 studerades förekomsten av de tre sympatriskt häckande labbarterna; bredstjärtad labb, labb och fjällabb (Kjellén 1997). En jämförande studie genomfördes under Tundraexpeditionen till norra Kanada 1999, som organiserades av Polarforskningssekretariatet och var baserad på den kanadensiska isbrytaren *Louis S. St-Laurent*. Material insamlades från starten i Nuuk på Grönland den 25 juni, via Nordvästpassagen, till vändpunkten Tuktoyaktuk vid Mackenzieflodens mynning den 31 juli (Figur 1). Under resan landsattes forskare med helikopter i nio olika provytor belägna på mindre än 10 km avstånd från kusten (Tabell 1). Besöken varade mellan 5 och 36 tim., men omfattade i allmänhet en 24-timmars period. Regelbundna observationer från båten registrerade art, ålder och kön hos samtliga observerade labbar. I provytorna inventerades samtliga bevingade lämmelpredatorer inklusive labbar varvid territoriella fåglar separerades. Redovisade gnagarindex (Tabell 1) baseras på antalet fångade smågnagare per 100 fällor som stått ute under 24 timmar (Angerbjörn m. fl. 2000). Majoriteten av dessa utgjordes av halsbandslämlar, utom i provyta 8 där främst mellansork fångades.

Resultat

Största skillnaden jämfört med den ryska tundran 1994 var de låga lämmeltätheterna i Kanada (Tabell 1). Detta medförde att relativt få labbar häckade i norra Kanada sommaren 1999. Totalt observerades 302 labbar fördelade på 4% bredstjärtade, 19% vanliga och 77% fjällabbar. I Tabell 2 redovisas materialet uppdelat på olika provytor och transportsträckor. Inga mörka bredstjärtade labbar sågs, medan de fåtaliga vanliga labbarna av mörk fas separerats liksom ett fåtal subadulta fåglar av de båda mindre arterna. Det är tveksamt om bredstjärtad labb överhuvudtaget häckade i den besökta regionen detta lämmelfattiga år. Mindre antal vanliga labbar sågs såväl från båten som i land. Även om inga bon hittades är det troligt att de flesta utgjordes av lokala häckfåglar, då labben inte är lika beroende av lämlar för att föda upp ungarna som de båda andra arterna. Även om fjällabb sågs i alla provytor utom Amundsen Gulf South, visade de endast tecken på häckning på Melville Peninsula (två bon), Bathurst Island South (8 par med bo + 4 territoriella par) och Banks Island (9 mer eller mindre territoriella fåglar). Fjällabbar överger ofta kullen om näringunderlaget är dåligt (Furness 1987). Få observerade ungfåglar under andra delen av expeditionen (Green m. fl. 2000) och ett antal döda fjällrävsungar i provyta 4 antyder en låg ungproduktion som en följd av dåligt födounderlag.

Artutbredning

Vanlig labb utgjorde 10% av totalt 1587 observerade labbar på den ryska tundran 1994, med flest i sydväst och på de sydligaste lokalerna (Kjellen 1997). Även om arten totalt utgjorde 19% 1999 så observerades vanlig labb på mindre än hälften av de besökta lokalerna (Green m. fl. 2000). Den saknades på de nordligaste lokalerna och antogs endast häcka i en provyta norr om 70° N. De båda expeditionerna ger en bild av arten som en gles cirkumpolär häckare inom hela den lågarktiska regionen, i områden där den inte kan leva som kleptoparasit på sjöfågelkolonier. En proportionellt högre andel i Kanada beror sannolikt delvis på att en del icke-häckare av de båda andra arterna redan lämnat häckningsområdet vid vårt besök.

Lämmelåret 1994 var bredstjärtad labb den vanligaste labben på den ryska tundran med 52% av

totalantalet (Kjellén 1997). I skarp kontrast noterades endast elva fåglar (4%) under första delen av expeditionen 1999. Även om ytterligare 36 adulta sågs från båten under den andra delen (Green m. fl. 2000) är det helt klart att fjällabben var betydligt vanligare i arktiska Kanada. Även om de mer nomadiska bredstjärtade labbarna kanske stannar kortare tid i häckningsområdet år när de inte häckar, så är detta knappast tillräckligt för att förklara de markanta skillnaderna mellan expeditionerna. Jag har inte hittat några publicerade labbtätheter från de kanadensiska öarna, men det är tänkbart att lämmeltopparna generellt är lägre än på den ryska tundran. Detta skulle i så fall missgynna bredstjärtad labb som är helt beroende av lämlar för att häcka. På de kanadensiska öarna förekommer nämligen i allmänhet endast halsbandslämmel (*Dicrostonyx*) medan de kraftiga topparna i Sibirien främst utgjordes av lämlar från släktet *Lemmus* (Bublichenko 1995, Erlinge m. fl. 1995). Å andra sidan hittade vi talrika spår av gamla häckningar av den likaledes nomadiska fjällugglan i flera provytor 1999. Även om enstaka fjällugglor sågs under expeditionen, visade de inga tecken på att häcka denna sommar.

Fjällabben var den klart dominerande labben 1999 med totalt 233 fåglar (77%, Tabell 2) och enligt Dementev and Gladkov (1969) är fjällabben generellt den vanligaste arten även i Ryssland. De årliga fluktuationerna i antal verkar vidare vara klart lägre än hos den mer nomadiska bredstjärtade labben (Cramp m. fl. 1983, Furness 1987). På den ryska tundran 1994 noterades mer än dubbelt så många bredstjärtade labbar som fjällabbar och materialet indikerade att de båda nomaderna, fjälluggla och bredstjärtad labb, främst utnyttjade de nordligaste delarna av transsekten.

Åldrar

Adulta fåglar dominerade hos alla tre arterna (Tabell 2). Avsaknaden av fjolårsfåglar (2k) stöder åsikten att dessa främst stannar i övervintringsområdena under sin andra sommar (Salomonsen 1967, Cramp m. fl. 1983, Furness 1987). Det är intressant att samtliga subadulta labbar (3–4k) under expeditionen observerades i Davis Strait mellan Grönland och Baffin Island, varför även dessa uppenbarligen endast når häckplatserna i begränsad omfattning. I Davis Strait fanns även stora antal icke-häckande stormfåglar, andra måsfåglar och alkor, främst spetsbergsgrisslor.

Faser

I det stora materialet från 1994 fanns ingen geografisk fasvariation hos bredstjärtad labb utan 8% mörk fas var representativt för hela den ryska tundran (Kjellén 1997). Uppgifter från nordamerikanska häckare antyder en variation på mellan 4 och 8 procent mörk fas (Manning m. fl. 1956, Frame 1973, Maher 1974). Samtliga publicerade siffror på över 10% mörka bredstjärtade labbar är baserade på små material varför en andel på 4–8% sannolikt är representativ för hela världpopulationen (Kjellén 1997).

Situationen är helt annorlunda hos vanlig labb med en komplex geografisk färgfasvariation. Generellt ökar andelen ljusa fåglar med ökande latitud och en markant gräns går mellan Kolahalvön (där mörk fas dominerar) och Ryssland öster om Novaya Zemlya, med total dominans av ljusa fåglar (Southern 1943, O'Donald 1983, Furness 1987). Detta demonstrerades tydligt av materialet från 1994. Bland de labbar som noterades på och väster om Kolahalvön var 64% mörka i stark kontrast till endast 3% mörk fas från Kolahalvön och österut ända till Wrangels ö (Kjellén 1997). Även om materialet från 1999 är mindre, visar det på liknande skillnader. Av tolv vanliga labbar vid Nuuk, Grönland var 25% mörka medan endast en mörk fas (3%) registrerades bland 27 fåglar under Nordvästpassagen (Tabell 2). Det förefaller således uppenbart att det föreligger en nästan total dominans av ljusa fåglar i den arktiska regionen. Undantag är områden där labbarna huvudsakligen lever som kleptoparasiter, som Norge, Island och delar av Grönland. En möjlig förklaring skulle kunna vara att mörka labbar är bättre kamouflerade, och därmed effektivare som näringsparasiter, över havet. Ingen har dock ännu lyckats bevisa detta (Furness 1987).

Endast två mörka fjällabbar (från västra Grönland) förefaller vara beskrivna och då båda uppvisar subadulta karaktärer (Boertmann 1994) är det tveksamt om man verkligen kan tala om en mörk fas. Nordamerikanska fjällabbar urskiljs som rasen *S. l. pallescens*, som skiljs från nominatrasen genom att ha mer vitt på undersidan. Vid passagen av Davis Strait 26–27 juni hade två av nio adulta fjällabbar så mycket grått på undersidan att de sannolikt tillhörde nominatrasen. Alla övriga adulta under expeditionen uppvisade karaktärer för *pallescens*.