

Ornithological Work on Surtsey in 1967

by

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A great majority of the land birds of Iceland are migratory. In autumn most of them proceed in a southeasterly direction and many winter in the British Isles, which is the first land they reach after crossing a wide stretch of ocean. However, some species continue to France and the Iberian peninsula, and some even to West Africa. In spring the direction is reversed, as migrants of Icelandic origin now proceed in a northwesterly direction and reach Iceland by way of or coming from the British Isles. Bird banding has furnished much of the existing information about winter quarters and migration routes of Icelandic migrants. Much information also exists about arrival dates of various species in spring and about their exodus in autumn. On the other hand, direct observational methods for the study of bird migration have been badly neglected in Iceland.

In view of this fact it appeared highly desirable to test the potentialities of Surtsey for such studies. It has long been known that islands lying in the path of important migrations furnish ideal conditions for the study of visible migration, and, as the southernmost part of Iceland, Surtsey appeared to fulfil these requirements. To be sure, the almost lifeless habitat of a new volcanic island could not be expected to tempt many land birds to stop on the island, but on the other hand the very sterility of the island could be expected to offer unique opportunities for studying the possible role of birds in transporting viable seeds or other organisms across ecological barriers such as wide stretches of ocean. On Surtsey there would be a fair chance that migrants could be collected on arrival before intake of food from local food resources was likely to obscure the results.

These were the main considerations that led to the decision to have Surtsey manned during the period of spring migration in 1967.

Mr. Árni Waag stayed on the island from March 31 to May 11. His work on the island was shared by Mr. Völundur Herróðsson from March 31 to April 17, by Mr. Páll Steingrímsson from April 17 to April 20, and by Mr. Jón Baldur Sigurdsson from April 22 to May 6.

Besides 13 species of resident sea-birds which were regularly seen around the island, 28 species of migratory birds were observed on or near the island during the above period. Individuals of many migrants settled on the island in greater numbers than had been expected and 97 birds were collected. The collected birds belonged to the following species:

1. Pink-footed Goose (<i>Anser brachyrhynchus</i>)	1
2. Ringed Plover (<i>Charadrius hiaticula</i>)	1
3. Golden Plover (<i>Pluvialis apricaria</i>)	2
4. Turnstone (<i>Arenaria interpres</i>)	6
5. Whimbrel (<i>Numenius phaeopus</i>)	4
6. Redshank (<i>Tringa totanus</i>)	9
7. Purple Sandpiper (<i>Calidris maritima</i>)	1
8. Dunlin (<i>Calidris alpina</i>)	3
9. Long-eared Owl (<i>Asio otus</i>)	1
10. Redwing (<i>Turdus iliacus</i>)	17
11. Wheatear (<i>Oenanthe oenanthe</i>)	5
12. Meadow Pipit (<i>Anthus pratensis</i>)	9
13. White Wagtail (<i>Motacilla alba</i>)	6
14. Snow Bunting (<i>Plectrophenax nivalis</i>)	32
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	Total 97

All collected birds were weighed and sexed, and a close search for seeds in their alimentary tract was made. All birds may distribute seeds, either directly or indirectly. Direct distribution is done by defecating viable seeds. This occurs less among seed-eating birds than among fruit and berry eating birds because seed-eating birds mostly crush the seeds by the bill and consume grit to ensure a final digestion in the gizzard. Indirect distribution takes place through seeds becoming embedded in mud on a bird's feet or bill, or seeds that attach themselves to the feathers of birds. The effectiveness of birds as dispersal agents varies greatly, as does the distance

the seeds are carried. Although it is a well known fact that many species of birds play some part in seed dispersal, very little is known about the possibility of long-distance dispersal of plants by birds. But this aspect of the work on Surtsey in 1967 will be dealt with by Dr. Sturla Fridriksson. Here merely the results of the ornithological observations will be discussed.

Early migrants like the redwing (Turdus iliacus), the golden plover (Pluvialis apricaria) and the common snipe (Gallinago gallinago) did not turn up on Surtsey in any numbers, but the reason for this may have been special weather conditions at the time of their arrival. Under normal conditions the main stream of spring migrants appears to reach the southeastern part of Iceland; and this is apparently more pronounced when the migrants experience westerly winds during their passage from the British Isles. Surtsey may thus lie at the western fringe of the main migration path.

On the whole there was never a pronounced passage of waders through Surtsey, the only exception being a considerable passage of redshanks (Tringa totanus) on April 17 when about 350 ~ 400 redshanks made a stop-over on the island. Oystercatchers (Haematopus ostralegus) and turnstones (Arenaria interpres) stayed on the island in small numbers throughout the study period, but although their numbers varied slightly from day to day there were no signs of a pronounced passage. However, in early April groups of oystercatchers of 5 ~ 10 birds were repeatedly seen approaching the island from the southeast. When on the island both oystercatchers and turnstones fed exclusively on euphausiids washed upon the shore. This was also the main if not the only food source for most other land birds visiting the island.

Throughout April the weather was unfavourable, cold and changeable, but during the first days of May it improved although it continued cold. On May 3 there was a light northeasterly breeze and clear skies. In the afternoon of that day a stream of migrants passed Surtsey and individuals of some species settled on the island in considerable numbers. Already at 1100 hrs. a flock of about 50 geese passed the island and from about 1300 hrs. until it became dark flocks of geese passed Surtsey on their way towards the mainland of Iceland.

Among the geese seen, greylags (Anser anser), pinkfeet (Anser brachyrhynchus), and barnacle geese (Branta leucopsis) could be identified, but geese in many flocks could not be identified because of the distance from the island. During the afternoon small flocks of barnacle geese settled twice on the north shore of the island.

In addition to geese, passerines passed the island in large numbers on May 3 and many stopped on the island. The passage of meadow pipits (Anthus pratensis) was particularly impressive, but white wagtails (Motacilla alba), redwings (Turdus iliacus), wheatears (Oenanthe oenanthe), and snow buntings (Plectrophenax nivalis) also passed through in some numbers. The passage of passerines was, however, perhaps still more pronounced the next day (May 4), whereas the passage of geese was almost confined to May 3.

On May 3 one merlin was present on the island and the next day two or more merlins were seen. They were preying upon various passerines.

Although waders were not conspicuously involved in the migratory movements described above, it may be mentioned that two whimbrels were collected on the island on May 3 and on the same day two large and very compact flocks of birds were seen heading for the mainland of Iceland. These were probably waders and most likely knots (Calidris canutus), although identification could not be established with certainty.

If we assume that the migrants reaching Surtsey on the afternoon of May 3 had come from Scotland and Ireland they probably set out on the evening of May 2 or during the following night. An examination of the weather conditions in the eastern North Atlantic shows that throughout the week before May 2 the weather on the west coast of Scotland and the north coast of Ireland was not conducive to the inception of migratory movements. The wind was westerly and the sky mainly overcast, with occasional drizzle or rain from April 25 to April 29. On April 30 and May 1 the wind was northerly and northwesterly, force 4-8, with showery weather. However, on May 2 the north wind decreased gradually and by midnight there was almost calm weather and mainly clear skies on the western seaboard of the British Isles.

Birds that had started about midnight that day heading for Iceland would have had light easterly or southeasterly winds for the first few hours. Then the easterly wind increased, and for the last two thirds of the way at the altitude of the birds it was between 25 and 35 knots. It is therefore almost certain that the birds drifted to the west. And possibly the wind was so strong that some of the birds may never have managed to reach Iceland. This westward drift may explain the "rush" of migrants reaching Surtsey and even heading for Iceland west of Surtsey.

During the entire study period on Surtsey a few snow buntings, usually 1 - 4, were almost daily encountered on the island, but a pronounced passage was not observed except on April 24 and on May 4. On April 24 about 30 snow buntings appeared suddenly on the island. Of these 21 (16 males and 5 females) were collected. All the collected birds proved to belong to the nominate race Plectrophenax nivalis nivalis and not to the Iceland race Plectrophenax nivalis insulae. It is therefore almost certain that the birds in question were of Greenland origin and that they were on migration from the British Isles to Greenland.

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