

SURTSEY RESEARCH

14



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Cover page: Drilling in Surtsey in 2017. The large photo was taken during the coring of the last of the three holes drilled. This hole had a 35° angle from vertical towards west. It retrieved a core through the island and the conduit that the eruption excavated into the pre-eruption seafloor. Inset left: The DOSECC drill rig. Inset right: The core from the bottom of the angled hole (about 290 m vertical depth below the surface), in the hands of the DOSECC drill crew (from left to right): Steve Cole, Justin Blouin, Anthony Vecchiarelli, Beau Marshall and Matthew Lyon.

Photos: Magnús Tumi Guðmundsson, August 29-September 4, 2017.

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Contents

INTRODUCTION

| | |
|---------------------------|---|
| Hallgrímur Jónasson | 7 |
|---------------------------|---|

METEOROLOGY

The climate of Surtsey

| | |
|--|---|
| Guðrún Nina Petersen, Trausti Jónsson..... | 9 |
|--|---|

GEOLOGY

Lithofacies from the 1963-1967 Surtsey eruption in SUSTAIN drill cores SE-2a, SE-2b and SE-03

| | |
|--|----|
| Jocelyn McPhie, James D.L. White, Carolyn Gorny, Marie D. Jackson, Magnús Tumi Gudmundsson and Samantha Couper | 19 |
|--|----|

Observations on the structure of Surtsey

| | |
|--|----|
| James G. Moore and Marie D. Jackson..... | 33 |
|--|----|

Petrographic and material observations of basaltic lapilli tuff, 1979 and 2017 Surtsey drill cores, Iceland

| | |
|-----------------------|----|
| Marie D. Jackson..... | 47 |
|-----------------------|----|

Erosion and sedimentation in Surtsey island quantified from new DEMs

| | |
|--|----|
| Birgir Vilhelm Óskarsson, Kristján Jónasson, Guðmundur Valsson and Joaquin M.C. Belart | 63 |
|--|----|

HISTORICAL GEOGRAPHY

A short note on place-names in Surtsey

| | |
|-------------------------|----|
| Birna Lárusdóttir | 79 |
|-------------------------|----|

BIOLOGY

Effects of sea birds and soil development on plant and soil nutritional parameters after 50 years of succession on Surtsey

| | |
|---|----|
| Rien Aerts, Richard S.P. van Logtestijn, Niki I.W. Leblans and Bjarni D. Sigurdsson | 85 |
|---|----|

Availability of plant nutrients and pollutants in the young soils of Surtsey compared to the older Heimaey and Elliðaey volcanic islands

| | |
|--|----|
| Bjarni D. Sigurdsson and Niki I.W. Leblans | 91 |
|--|----|

Sea sandwort from Surtsey: chromosomal evidence of active evolution via wide-hybridization

| | |
|--|----|
| Kesara Ananthawat-Jónsson, Audrey Pace and Sigurður H. Árnason | 99 |
|--|----|

Seabirds and seals as drivers of plant succession on Surtsey

| | |
|---|-----|
| Borghthór Magnússon, Guðmundur A. Gudmundsson, Sigmar Metúsalemsson and Sandra M. Granquist | 115 |
|---|-----|

Hydrozoan colonization and succession in the sublittoral zone of Surtsey during the period 1967 to 1984

| | |
|--|-----|
| Steffen Lundsteen, Erlingur Hauksson and Karl Gunnarsson | 131 |
|--|-----|

Introduction

The Surtsey Research Society aims to protect and raise the interest on scientific work related to the Surtsey island. The island has been a pristine natural laboratory for more than 55 year, where scientists have followed the island's geological, geographical, biological and ecological evolution.

The island has been protected since its birth, which is unique for volcanic islands worldwide. In the documentation from the UNESCO World Heritage Centre it is stated that "Surtsey was born as a new volcanic island in 1963-67 and since that time has played a major role in studies of succession and colonisation. It has been the site of one of the few long-term studies worldwide on primary succession, providing a unique scientific record of the process of colonisation of land by plants and marine organisms." It is as well stated that Surtsey will continue to provide invaluable data on biological colonisation long into the future. Every year a group of scientists fulfills this objective.

To pursue its main goal, the Surtsey Research Society now publishes the 14th volume of *Surtsey Research*. The first volume of the series was published already in 1965 and contained papers on oceanography, geology, geochemistry, geophysics and biology. Now, 55 years later there is more scientific interest than ever in this unique island. The present volume contains 11 papers that address different topics within meteorology, geology, biology and human geography.

On the cover page there is a picture taken during the SUSTAIN drilling operation on Surtsey in August 2017. The study focuses on the geology of the island, the birth and evolution by integrating volcanology, geophysics, geochemistry, and microbiology. The SUSTAIN project extracted two vertical cores with the length of 344 m and one core from an inclined drill hole 354 m long. There was an earlier drilling on Surtsey done in 1979, so a comparison of the two cores was feasible. The study was to see how the details of the internal structure and thermal history has evolved, petrographic insight into time-lapsed alteration. Three papers in the current issue are from this research initiative.

Such a drilling operation is quite a venture, but every effort was made to preserve the sensitive surface and subsurface environments of the island during the drilling operation from end of July to beginning of September. At the termination of the drilling activities the restoration of the island environment was approved as correctly implemented by the Environmental Agency of Iceland. The Surtsey Research Society is pleased that the operation was successful and it acknowledges that the new boreholes offer unique future opportunities for continued monitoring of both geological and biological sub-surface processes.

Geology, biology and related sciences have been the most prominent research topics published in Surtsey Research from the beginning. However, in this volume a new chapter is being opened in the island's research history, as it contains one study within the topic of human geography. It was done on the researchers themselves and the place names they have created on the island during its 57 years of existence.

Finally, I would like to thank the editorial committee: Bjarni D. Sigurðsson, Borþór Magnússon, Ingvar Atli Sigurðsson, Karl Gunnarsson and Kristján Jónasson for their editorial work, as well as Þórunn Edda Bjarnadóttir, for the layout. Also, I want to thank the 29 authors for submitting their papers for publication in *Surtsey Research*, but the continued interest and dedication of all those scientists is the main reason for continued existence of the Surtsey Research Society

Hallgrímur Jónasson,
Chairman Surtsey Research Society

METEOROLOGY