

# Gunnarsholt and Beyond



A wee glimpse of Alexander Robertson's extension work in Iceland emanating from the Gunnarsholt Experimental Project



Landgræðsla ríkisins

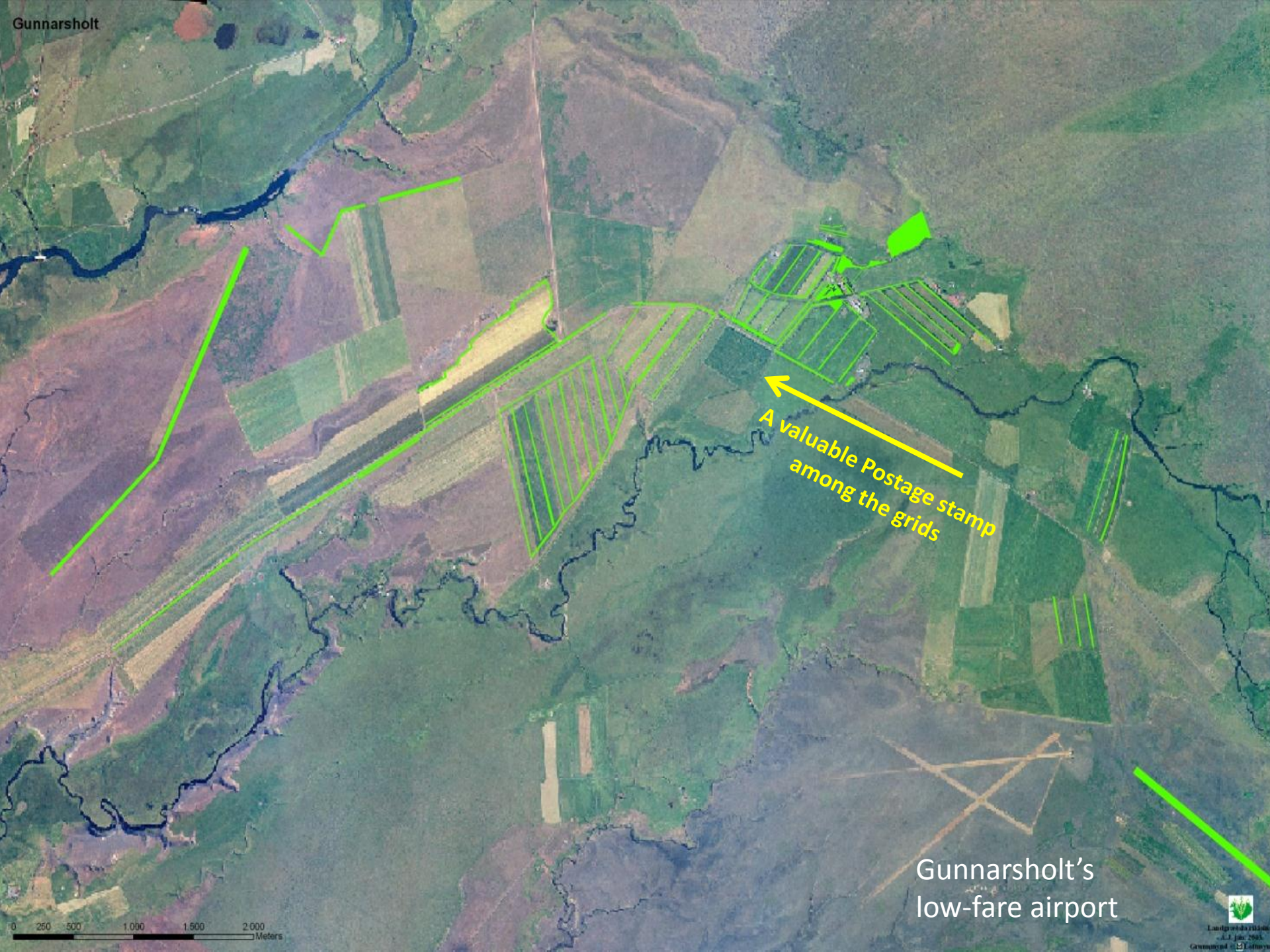
Gunnarsholt 2 sept. 2007 High Res

© Mats Wibe Lund

The 14 ha Gunnarsholt Experimental Plantation , originally designed for studying energy fluxes and later for a wide range of studies by about 45 graduate students , academics and scientists with a broad range of interests.



The Gunnarsholt Experimental  
Plantation provided the impetus  
for what follows



Gunnarsholt

A valuable Postage stamp  
among the grids

Gunnarsholt's  
low-fare airport

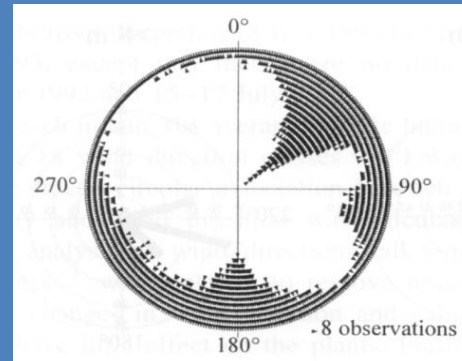
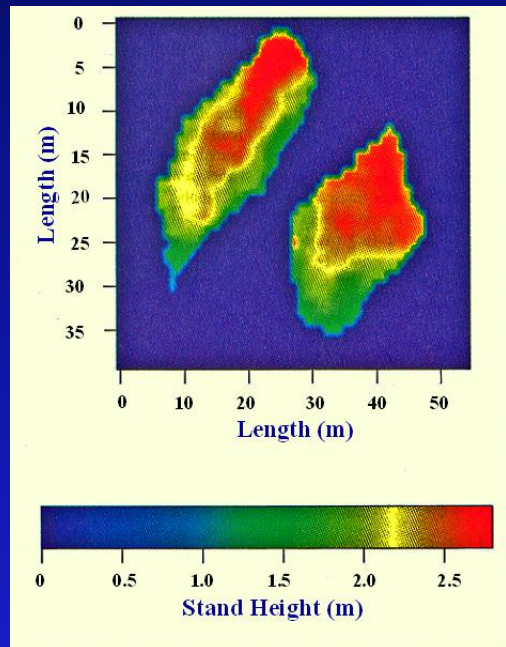
0 250 500 1,000 1,500 2,000  
Meters



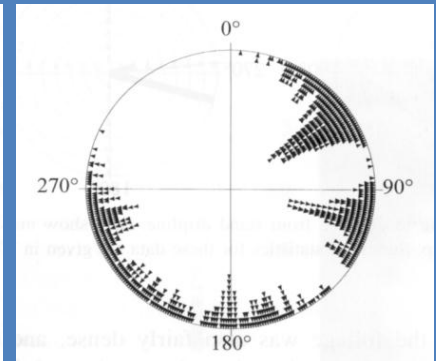
# A testimony to those remarkable 'Key Kids' from Akranes – known for their insatiable passion for corn flakes; and stubborn thinnings that refused to die



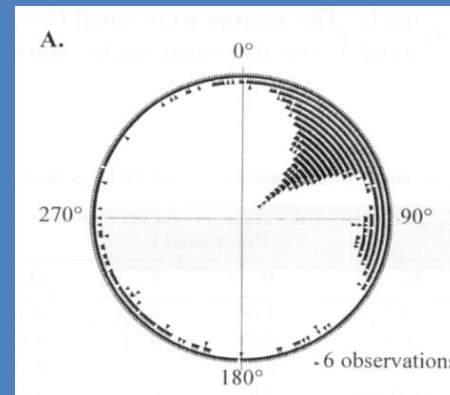
# Madly off in all Directions



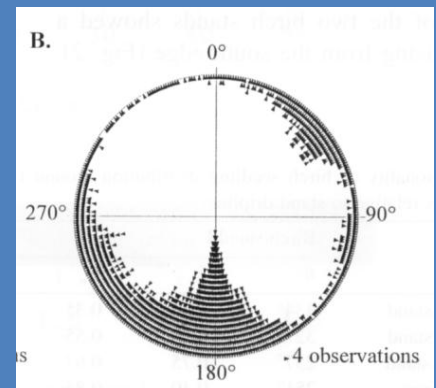
$> 2 \text{ m s}^{-1}$



$> 10 \text{ m s}^{-1}$



'dry' winds  
( $\text{Rh} < 75\%$ )



'wet' winds  
( $\text{Rh} > 85\%$ )

**Circular statistical analysis of birch colonization and the directional growth response of birch and black cottonwood in south Iceland**

*Ása L. Aradóttir<sup>1</sup>, Alexander Robertson<sup>2</sup> and Edward Moore<sup>3</sup>*



# 25 years of Storhofði's Wind Data

If only all weather stations would be so obliging!

## BASIC STATISTICS

Analysis begun: May 28, 2008 3:22:28 PM

Variable **Direction**

Data Type Angles

Number of Observations **61,725**

Data Grouped? Yes

Group Width (& Number of Groups) 10° (36)

Mean Vector ( $\mu$ ) 1.3E+2°

Length of Mean Vector (r) 0.1

Median 1.1E+2°

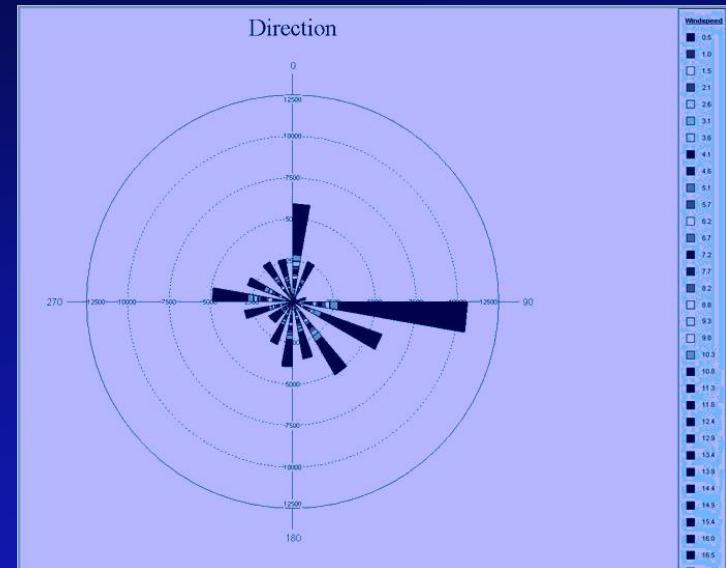
Concentration 0.3 circular Variance 0.9

Circular Standard Deviation 1.2E+2°

Standard Error of Mean 1.3°

95% Confidence Interval (-/+ ) for  $\mu$  1.2E+2°  
1.3E+2°

99% Confidence Interval (-/+ ) for  $\mu$  1.2E+2°  
1.3E+2°



Software Provided by  
Kovach Computing Services



KC2

<http://www.kovcomp.co.uk/oriana>

# Mad Bats Under a Wet Blanket

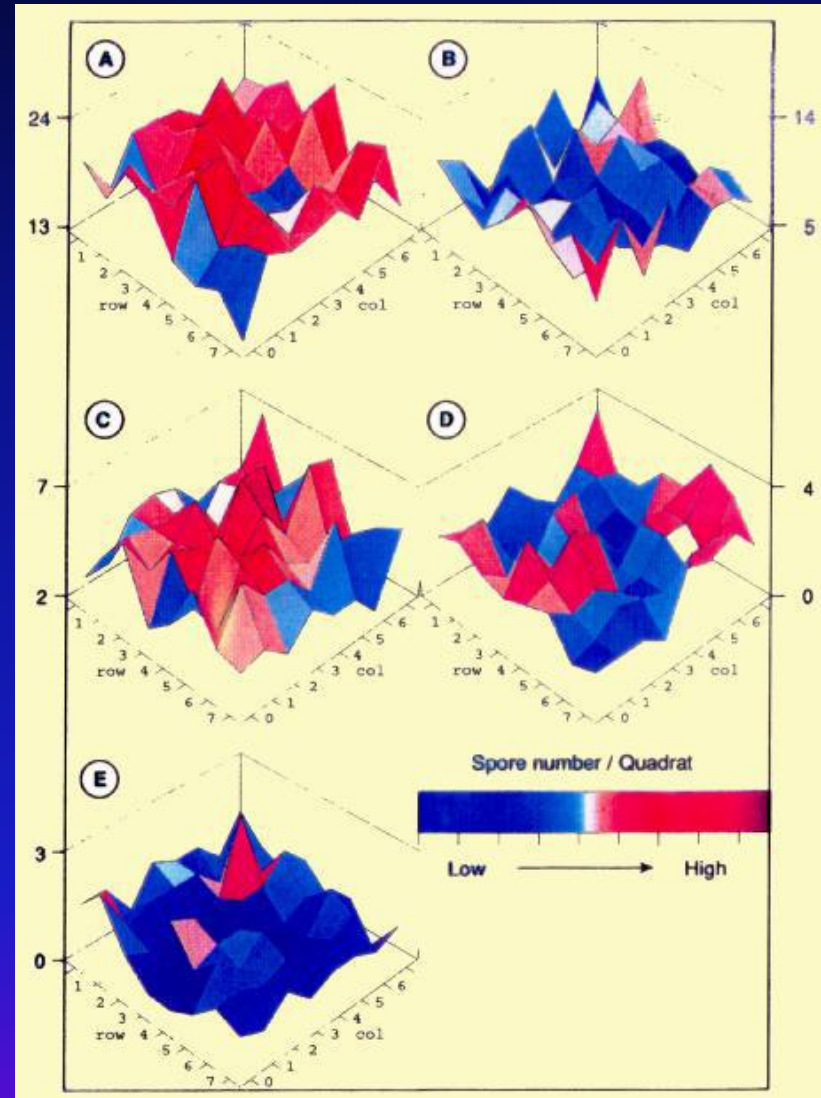
Or

The art of understanding  
chaotic dynamics of  
nano-turbulence – sort  
of!!!



Source: M. C. Hampson & A. Robertson *Distribution of Fungal Spores and Fractal Diversity of Quadrats on membrane Filters* J. Food Protection 58:1038-1047 (1995)

Spore ranges



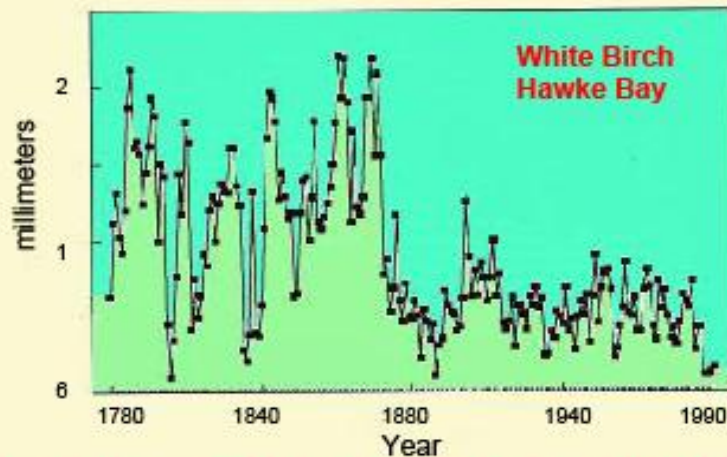
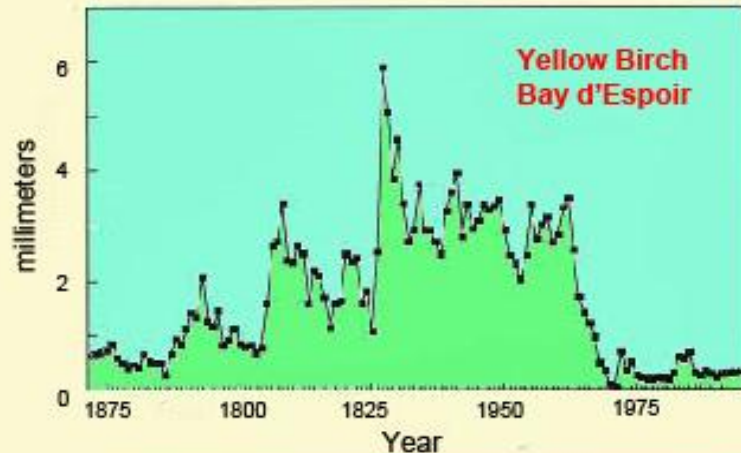
Rows & columns of gridded membrane filters



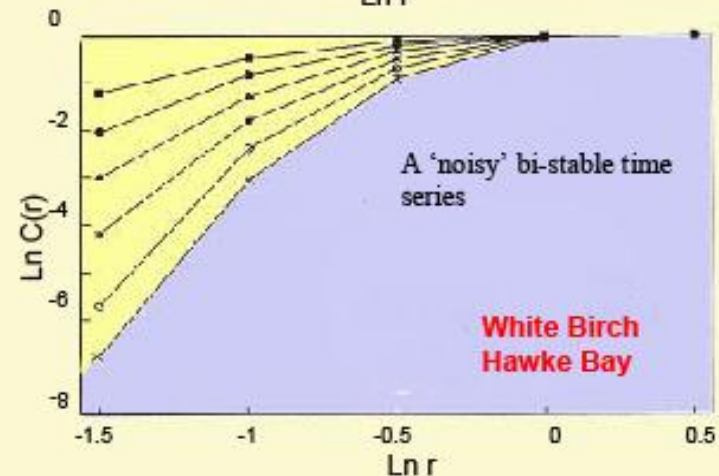
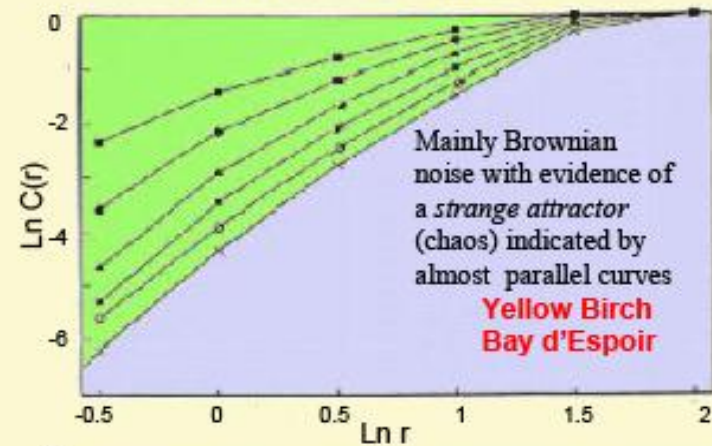
# Understanding Financial Futures – Sort Of!

## Similarities Between Hedge Funds and Tree Rings

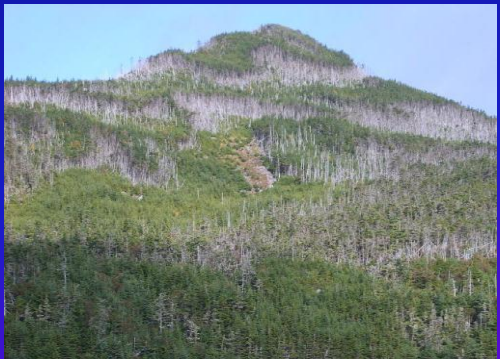
Time Series of Radial Increment



Embedding Dimensions



# Obsession with Windrowing – Keep it simple, Eh!

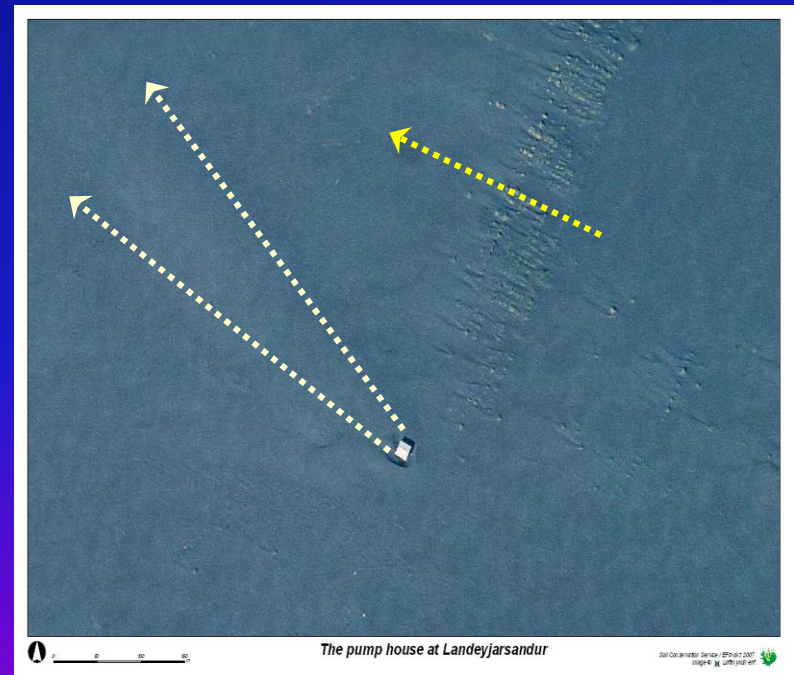




# The Shifty Humpback Whale of Landeyjasandur



Moderately strong winds from two principle direction s shift the large humpback dune from left to right of the pump house (which suplies fresh water from the mainland to the Westman Islands.

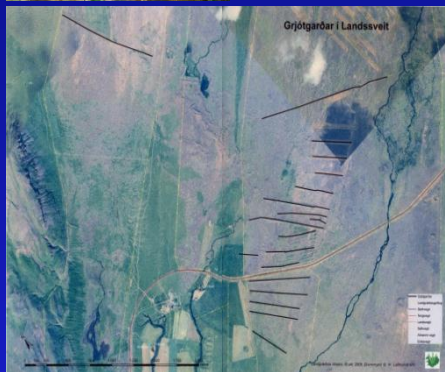
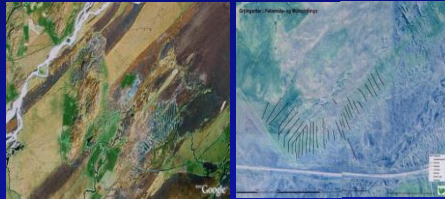


*Stone Walls for Landscape  
Restoration  
in  
Iceland*

Alexander Robertson  
Sveinn Rúnólfsson  
Ingvi Thoresteinsson



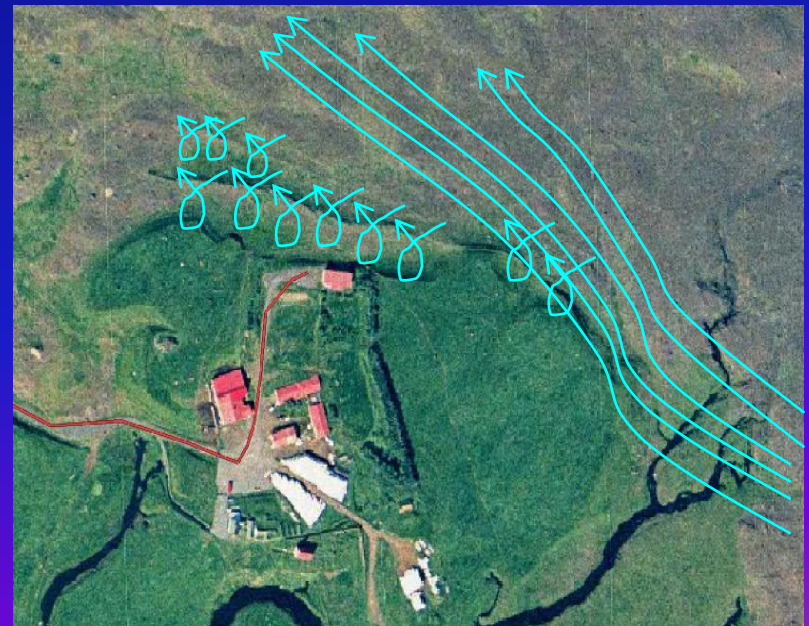
Soil Conservation Service 2008



# Stone Walls for Soil Conservation



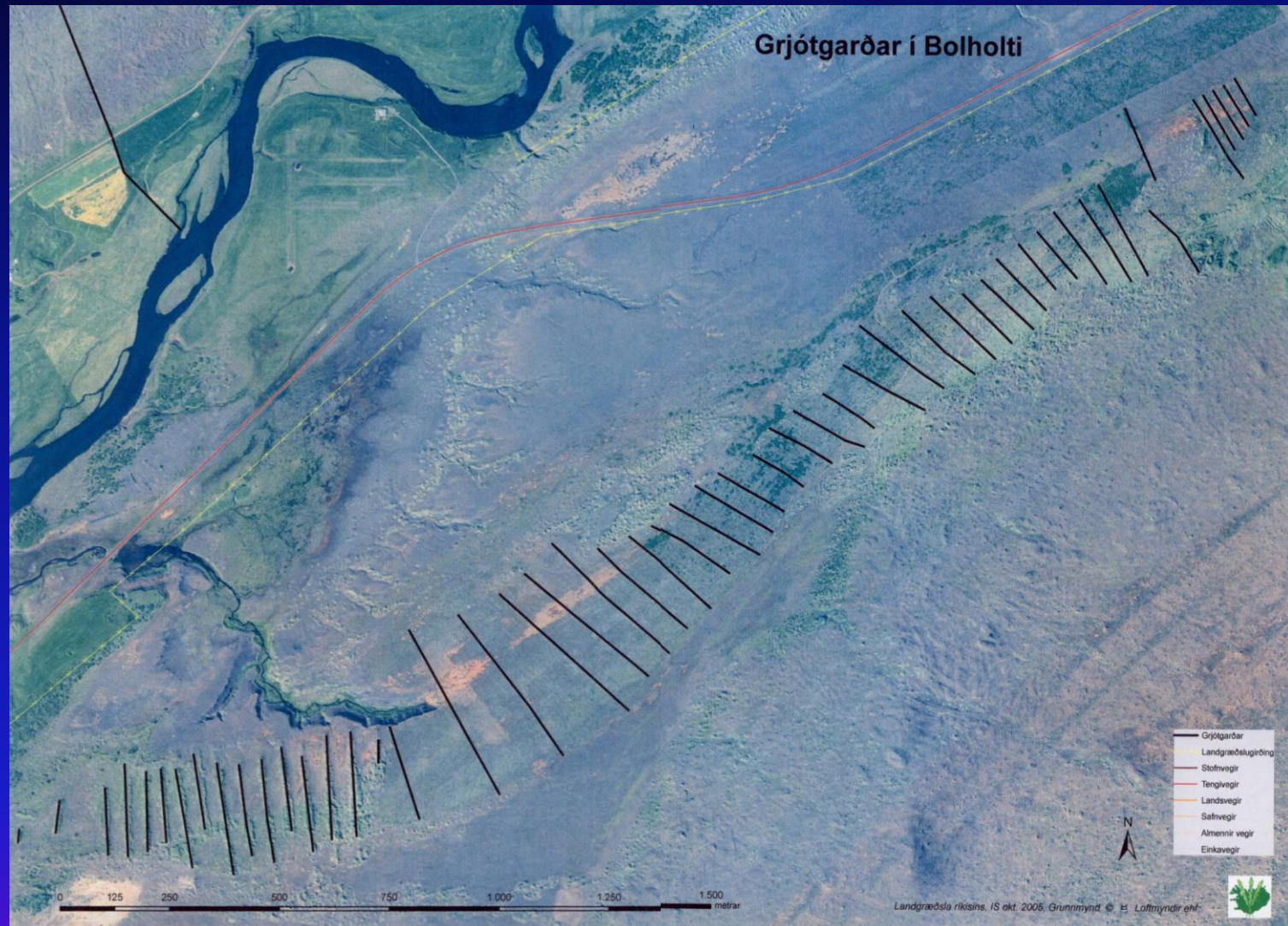






# Stone Walls for Soil Conservation

A super human effort worthy of the of Sagas





# Goggle Earth celebrities **Lars, Rocky, Snow Cloud, Sky, Sigrunn, Supersonic Bill**, and their **younsters** at their bi-annual meeting at Reykur

## Topic: **"Necessity of Stone Walls for Super Whoopers"**



For Fall Registration Logon to <http://whooper.wwt.org.uk/whooper>

# Stone Walls for Soil Conservation

## Can't See the Trees for the Walls!





# Stone Walls for Soil Conservation

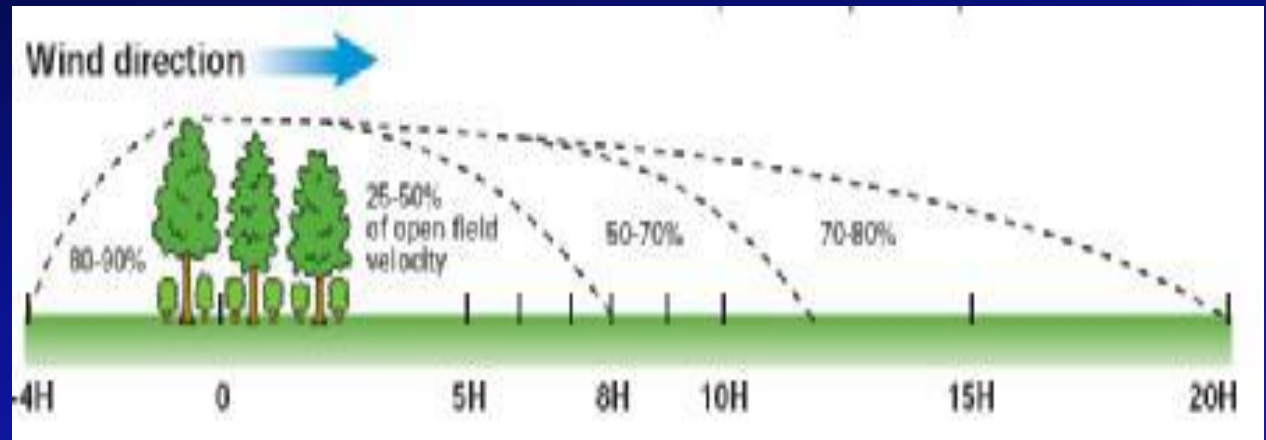
## Can't See the Walls for the Trees!



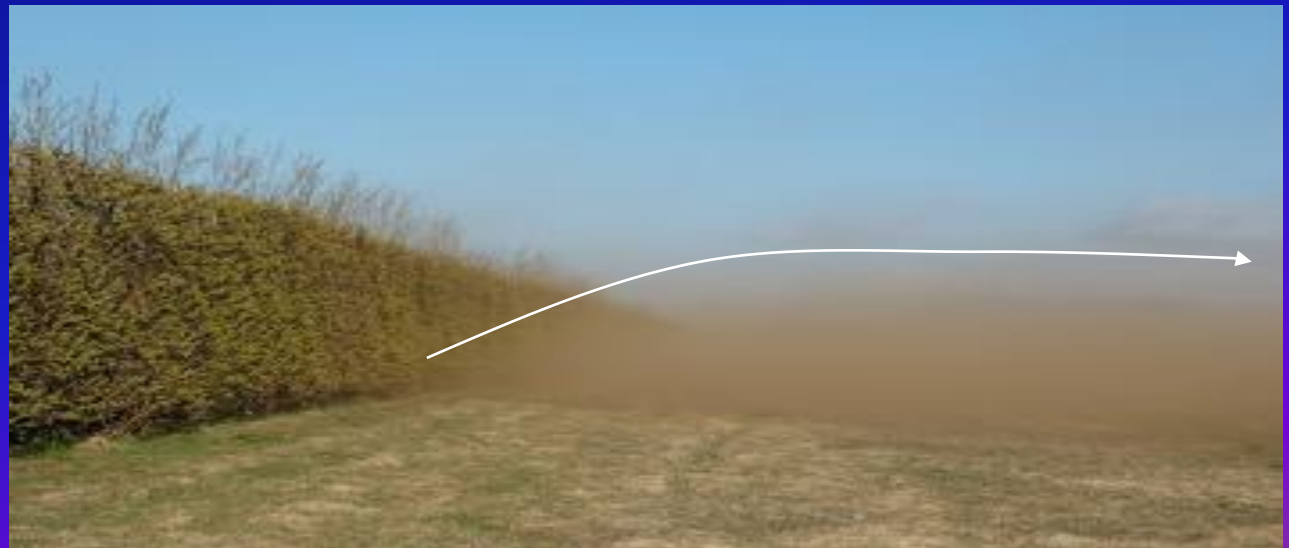
# Gunnarsholt's Indispensable Shelterbelts

## Theory vs Reality

Standard  
Scottish  
Theory



Gunnarsholt  
Reality





# The Great Westfjord Forest Project

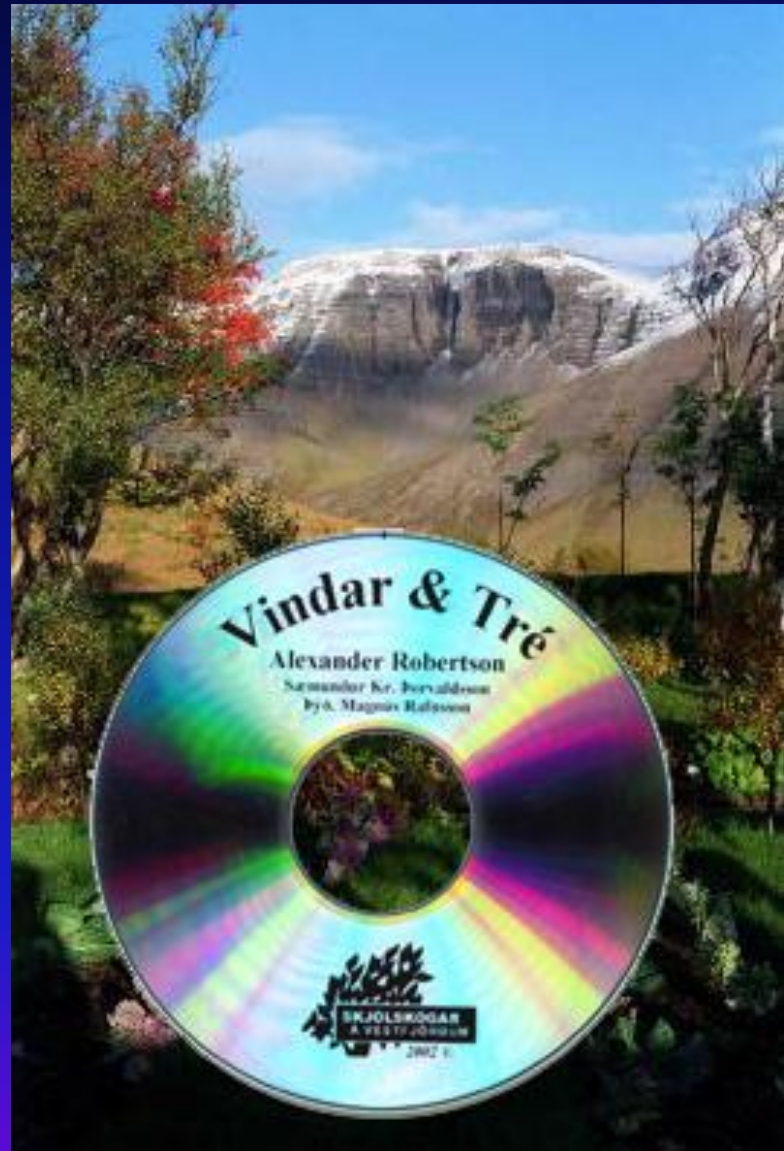
## Áhrif landslags á veðurfar og trjávöxt

Eftir

Alexander Robertson & Sæmund Þorvaldsson

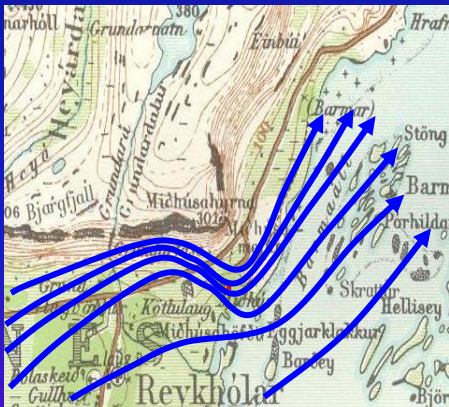


Skjólaskógar á Vestfjörðum





# Assessing the Westfjords





# Hvanneyri's Nebulous Wind Reader Lectures

## “Of all the Airs the Wind may Blaw”

O' a' the airts the wind may blaw,  
T'ween byre, an' kirk and school;  
The bonny students like tae roam,  
Tae brave the fearsome gale;  
In search o' things they cannae see,  
Amang the helical rolls;  
Wi' twist an' turns, like butter churns,  
The fractals freeze their nose.





# Tackling Wind at Hvanneyri





# The Visual and Useful Arts



Arms of Sigurður Blöndal of Hallormsstað, Iceland

Woodcarving by Alexander Robertson, October, 2000

# WIND READER

A series of slide shows on many aspects related to wind in the landscape

## WIND READER



Alexander Robertson

### Part 1: Visualizing Turbulence



### Part 2: Assessing Wind



### Part 3: Weather Effects



### Part 4: Shelterwood & Structures



### Part 5: DESIGN WITH NATURE



### Part 6: Architecture



### Part 7: The Role of Biodiversity



### Part 8 : Geodiversity



### Part 9: Culture



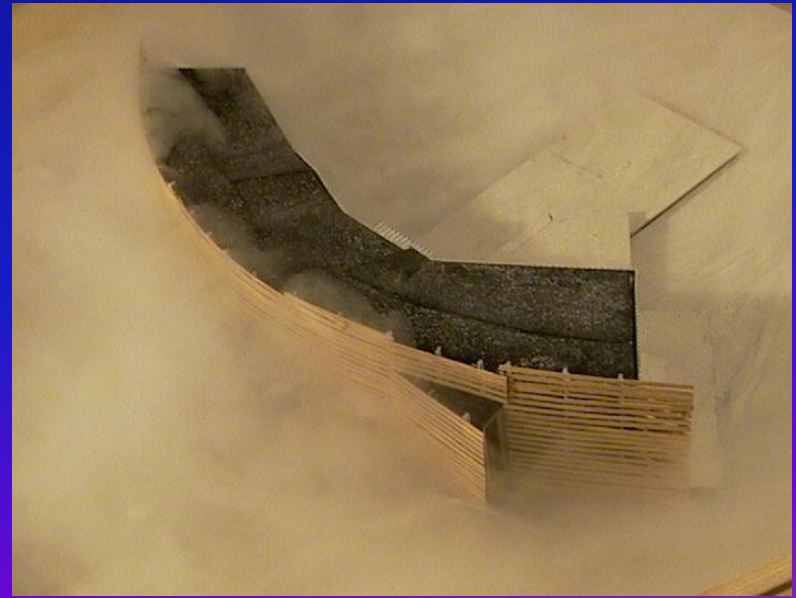
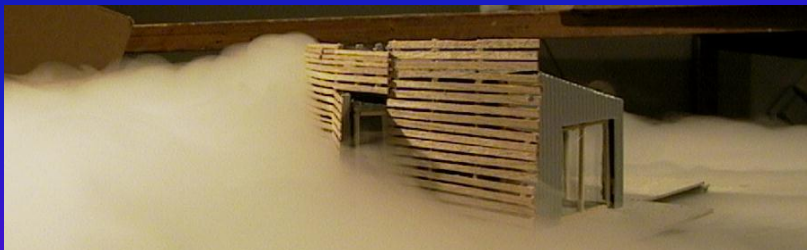


# Wood Carving as an Environmental Service Lost in Gunnarsholt (top) & Great Walls of Bolholt



Wood Carvings on the  
**The History of the Iceland Soil Conservation Service**

# Baffling the Cold Winds of Urbanville





# Simulating and Manipulating



**Students of the Landscape and Shelterwood Course, Agricultural University of Iceland, Hvanneyri**

# THE ICELANDIC KNOT

It is incomprehensibly

Fractal,

Lacunar,

Heterogeneous

&

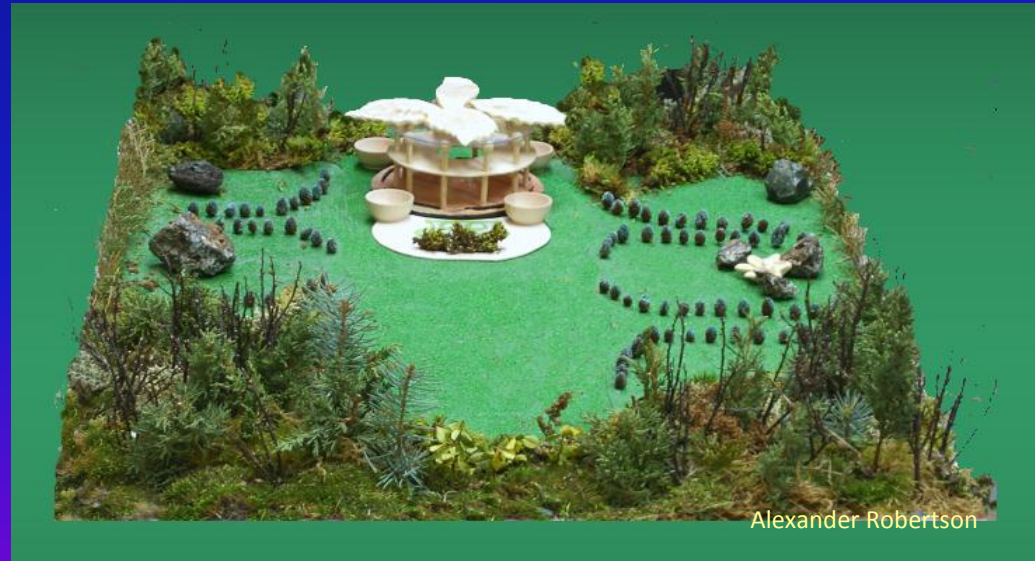
Artsy





# Hallormsstaðir Tree Nursery

## A Robertsonian concept for a Forest Cultural Centre





## RECENT ARTICLES AND SEMINARS PERTAINING TO ICELAND

Alexander Robertson, Sveinn Runólfsson and Ingvi Þorsteinsson. *Grjótgarðar í landgræðslu á Íslandi* *Stone Walls for Soil Conservation*. Landgræsla ríkisins Íslandi (Iceland Soil Conservation Service) 2008

Alexander Robertson *Wind Reader* (Translated to Icelandic by Ingvi Þorsteinsson & Sveinn Runólfsson) 2008

Alexander Robertson, Auður Sveinnsdóttir, Sveinn Runólfsson and Skuli Lyðsson. *Landscape & Shelterwood: Tackling the Ubiquitous Wind*. Conference, Afforestation in Nordic Countries; Nordic Council of Ministers, Reykhól, Iceland. 2005

Alexander Robertson *Landscape Architecture & shelter Woodlands*. Guest Lecture, Seminar on Architecture and Forestry sponsored by the Iceland Architects Association, Iceland Landscape Architects Association, Iceland Forest Service, Soil Conservation Service, and the Agricultural University of Iceland (Hvanneyri) Reykjavik, Sept. 2004

Alexander Robertson and Þröstur Eysteinnsson. *Community Forestry in Iceland*. Paper Canadian Institute of Forestry, Newfoundland & Labrador Section Annual General Meeting. St. John's, Oct. 2003

Alexander Robertson and Þröstur Eysteinnsson. Íslenska fléttan. *Skógræktarríðið* 2002 2.tbl :91-95

Alexander Robertson and Sæmundur Þorvaldsson. *Áhrif landslags á verðurfar og trjávöxt* (*Assessing the Landscape for Actual and Potential Effects of Weather on Trees*). Compact Disc "Vindar & Tré" produced by *Skjöliskógar á Vestfjörðum*, (*Shelter Woodlands for the Westfjords*), Þingyeri, Iceland, 2002 (in Icelandic)

Alexander Robertson *The Physical Environmental Approach to reforestation of man-made barrens: Forestry Beyond the Timberline Workshop: Ecological and Socio-economic Factors Affecting Forestry in the Context of Rural Development in the North Atlantic Region*. Akureyri, Iceland (June, 2000). *Skógræktarríðið* 2001 1.tbl (Icelandic Forestry 2001 No. 1)

Alexander Robertson. *Forests and global climate change: fractals, chaos and directional data - first principles of complexity*. MUN Engineering & Applied Science Lecture (1996)

A.Aradóttir, H.Thorgeirsson, J.H.McCaughey, I.B.Strachan and Alexander Robertson. *Establishment of a black cottonwood plantation on an exposed site in Iceland: plant growth and site energy balance*. *Agric. For. Meteorology* 84(1-9) (1997)

A. Aradóttir and Alexander Robertson. *Circular statistical analysis of birch colonization and the directional growth response of birch and black cottonwood in south Iceland*. *Agric.For. Meteorology* 84: 179-186 (1997) and St. Pierre and Miquelon CD 2000

Alexander Robertson. *Tré og vindur*. *Arskriti Skógræktarfelags* (1989) (In Icelandic)



# ICELAND'S PEOPLE AND LANDSCAPES

## AN INSPIRATION FOR HIGHLAND BAGPIPE COMPOSITIONS



Great Westfjord Forest  
(Jig)



Bonnie Lassies o' Hvammir  
(Strathspey)



Heiðahvammur's Bonny Woods  
(Reel)



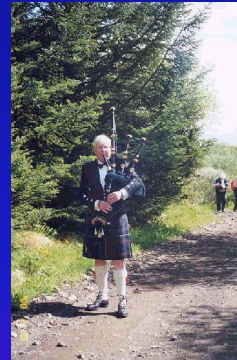
Treeplanter's Fancy  
(Hornpipe)



Stapi Hellnar's Wee Church Organ  
(Pibroch)



Green Fields of Gunnarsholt  
(Slow Air)



Big Spruce of Haukadalur  
(March)



Wee Folk of Hvanneyri  
(Reel)

# CATCHING FLYING TREES

Robertson's end game for forest restoration in Iceland







Vertu blessaður