



# Curriculum vitae

## Dr. Bjarni Diðrik Sigurðsson

### Professor of forest science

- Co-ordinator for the Forest Science, Restoration Ecology and Management B.Sc. and M.Sc. Program r

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### Languages

Icelandic: Fluent  
English: Fluent  
Swedish: Fluent  
Spanish: Not fluent

### Post-graduate work experience

March 2006– ...

#### **Appointed as co-ordinator of the FS-REM Program at the Agricultural University of Iceland (AUI)**

I was appointed as a co-ordinator for a new B.Sc. and M.Sc. program at AUI, entitled “Forest Science, Restoration Ecology and Management Program”

Jul 2005 – Mar 2006

#### **Professor of forest science at AUI.**

I started as the first ever appointed professor in forest science in Iceland. My position is both research and education related.

Feb 2001 – Jul 2005

#### **Senior Researcher at the Icelandic Forest Research, Mógilsá, Iceland**

My field of expertise was studies on carbon fluxes and carbon sequestration in woody ecosystems.

### Higher education

Jan 1990 – Jun 1993

#### **University of Iceland**

##### *Dept. of biology*

I attained a B.Sc. degree in biology in spring 1993. My speciality was botany and plant-ecology.

Jan 1996 – Feb 2001

#### **The Swedish University of Agricultural Sciences**

##### *Dept. for Production Ecology, Faculty of Forestry*

I attained a Ph.D. degree in Forest Ecology / Ecophysiology in February 2001.

## **Committees, steering boards and other merits (past 1 year)**

### **Organizer of an European workshop on effects of extreme weather events**

I am in the organizing committee and acted as a session chair at an European scientific workshop entitled “*Extreme Weather Conditions and Consequences for Terrestrial Ecosystems*“, given by the EU-funded projects CLIMMANI. It will take place during 5-8 June, 2012, at Dubrovnic, Croatia.

### **Steering board of a Nordic research network: NordFlux (2008-2012)**

I have one of four chairs in the steering board of the “*NORDFLUX*” which is a research network funded by NordForsk. It is built up around the groups in Nordic countries studying processes that control the exchange of greenhouse gases in different types of ecosystems at high latitudes. The group’s coordinator is prof. Anders Lindroth, Lund University, and other steering board members are prof. Tiom Vesala from Helsinki Univ. and senior researcher Ebba Dellwik from Risø National Laboratory, Denmark.

### **Associate editor of Icelandic Agricultural Sciences (2004-)**

I am one of two associate editors of Icel. Agric. Sci. ([www.ias.is](http://www.ias.is)) An ISI listed scientific journal that publishes original research articles in English about research on land use and land-use change.

### **Editorial Board member of Scandinavian Journal of Forest Research (2009- )**

I have a chair in the editorial board of Scand. J. For. Res. A ISI-listed scientific journal that publishes original research articles in English on all topics of forest science. Its impact factor is 0.69, which is a relatively good for a forest science journal.

### **Member of the steering board of Surtseyjarfélagið (2009 - ...)**

I have a chair in the steering board of Surtseyjarfélagið, which administrates the research being done at the World Heretage Site, Surtsey. See: [www.surtsey.is](http://www.surtsey.is)

### **Organizer of an international conference on effects of climate change (2011)**

I was the local organizer of an international conference entitled “*Nutrient constraints on the net carbon balance*“, given by the EU-funded project CLIMMANI and the US-funded project INTERFACE. It took place during 14-17 June, 2011, at Icelandair hotel – Flughotel, Keflavik, Iceland.

## Publications of Bjarni D. Sigurðsson

In total Bjarni D. Sigurdsson (2011) has 41 publications in international scientific journals or books with editorial boards – 21 other publications in English/Swedish - 69 scientific publications in Icelandic and reports. Total: 131 scientific publ. since 1998 (9.4 per year). ISI-Citations (2010): 333. Most cited paper (2010): 152. Supervision history (graduated): 1 PhD student and 10 MSc students: ongoing: 1 PhD student and 6 MSc students. External research funding (2011): ca. 17 millions ISK/year.

### In international journals and books with review board (primary publications):

#### 2010

1. Jon A. Jonsson and **Bjarni D. Sigurdsson** (2010). Effects of early thinning and fertilization on soil temperature and soil respiration in a poplar plantation. *Icelandic Agricultural Sciences* 23: 97-109.
2. **Sigurdsson, Bjarni D.** & Borgþór Magnússon (2010). Ecosystem respiration, vegetation development and soil nitrogen in relation to breeding density of seagulls on a pristine volcanic island, Surtsey, Iceland. *Biogeosciences* 7, 883-891.
3. Gundersen, P., Laurén, A., Finér, L., Ring, E., Koivusalo, H., Sætersdal, M., Weslien, J.-O., **Sigurdsson, B.D.**, Högbom, L., Laine, J., and Hansen, K. 2010. Environmental services provided from riparian forests in the Nordic countries. *Ambio* 39: 555-566.
4. M. Maljanen, **B. D. Sigurdsson**, J. Guðmundsson, H. Óskarsson, J. T. Huttunen, and P. J. Martikainen (2010) Land-use and greenhouse gas balances of peatlands in the Nordic countries – present knowledge and gaps. *Biogeosciences* 7, 2711-2738.

#### 2009

5. Brynhildur Bjarnadóttir, **Bjarni D. Sigurdsson** and Anders Lindroth (2009). Seasonal and annual variation of carbon fluxes in a young Siberian larch (*Larix sibirica*) plantation in Iceland. *Biogeosciences* 6: 2895-2906.
6. Jan Weslien, Leena Finér, Jon A. Jonsson, Harri Koivusalo, Ari Laurén, Thomas Ranius, **Bjarni D. Sigurdsson** (2009) Effects of increased forest productivity and warmer climates on carbon sequestration, runoff water quality and accumulation of dead wood in a Boreal landscape: a modeling study. *Scandinavian Journal of Forest Research* 24: 333-347.
7. Kostianinen, Katri, Seija Kaakinen, Pekka Saranpää, **Bjarni D. Sigurdsson**, Sven-Olof Lundqvist, Sune Linder & Elina Vapaavuori. 2009. Stem wood properties of mature Norway spruce after three years of continuous exposure to elevated carbon dioxide and temperature. *Global Change Biology* 15(2): 368-379

#### 2008

8. Lindroth, Anders, Fredrik Lagergren, Mika Aurela, Brynhildur Bjarnadóttir, Torben Christensen, Ebba Dellwik, Achim Grelle, Andreas Ibrom, Torbjörn Johansson, Harry Lankreijer, Samuli Launiainen, Tuomas Laurila, Meelis Mölder, Eero Nikinmaa, Kim Pilegaard, **Bjarni D. Sigurdsson** and Timo Vesala. 2008. Leaf area index is the principal scaling parameter for both gross photosynthesis and ecosystem respiration of northern deciduous and coniferous forests. *Tellus* 60B: 129-142.

9. Ward, Eric J., Ram Oren, **Bjarni D. Sigurdsson**, Paul G. Jarvis & Sune Linder. 2008. Fertilization effects on mean stomatal conductance are mediated through changes in the hydraulic attributes of mature Norway spruce trees. *Tree Physiology* 28(4): 579-596.
10. Asrun Elmarsdottir, Arne Fjellberg, Gudmundur Halldorsson, Maria Ingimarsdottir, Olafur K. Nielsen, Per Nygaard, Edda Sigurdis Oddsdottir, **Bjarni D. Sigurdsson**. 2008. Effects of afforestation on biodiversity. In AFFORNORD: Effects of afforestation on ecosystems, landscape and rural development. Edited by G. Halldórsson, E.S. Oddsdóttir, and B.D. Sigurdsson. TemaNord 2008:562, Nordic Council of Ministers, Copenhagen. pp. 37-47.
11. Harald Sverdrup, Salim Belyzaid, Asrun Elmarsdottir, Borgthor Magnusson, **Bjarni D. Sigurdsson**. 2008. Modelling ground vegetation changes. In AFFORNORD: Effects of afforestation on ecosystems, landscape and rural development. Edited by G. Halldórsson, E.S. Oddsdóttir, and B.D. Sigurdsson. TemaNord 2008:562, Nordic Council of Ministers, Copenhagen. pp. 49-55.
12. **Bjarni D. Sigurdsson**, Harald Sverdrup, Salim Belyazid, and Brynhildur Bjarnadottir. 2008. Effects of afforestation on the carbon cycle. In AFFORNORD: Effects of afforestation on ecosystems, landscape and rural development. Edited by G. Halldórsson, E.S. Oddsdóttir, and B.D. Sigurdsson. TemaNord 2008:562, Nordic Council of Ministers, Copenhagen. pp. 87-99.

#### 2007

13. Hyvönen, Riitta, Göran I. Ågren, Sune Linder, Tryggve Persson, M. Francesca Cotrufo, Alf Ekblad, Michael Freeman, Achim Grelle, Ivan A. Janssens, Paul G. Jarvis, Seppo Kellomäki, Anders Lindroth, Denis Loustau, Tomas Lundmark, Richard J. Norby, Ram Oren, Kim Pilegaard, Michael G. Ryan, **Bjarni D. Sigurdsson**, Monika Strömngren, Marcel van Oijen and Göran Wallin. 2007. Tansley review. The likely impact of elevated [CO<sub>2</sub>], nitrogen deposition, increased temperature and management on carbon sequestration in temperate and boreal forest ecosystems. *New Phytologist*, 173: 463–480.
14. Brynhildur Bjarnadottir, **Bjarni D. Sigurdsson** and Anders Lindroth. 2007. Estimate of annual carbon balance of a young Siberian larch (*Larix sibirica*) plantation in Iceland. *Tellus B* 59 (5): 891–899.
15. Brynhildur Bjarnadóttir, Anna Cecilia Inghammar, Mona-Maria Brinker and Bjarni D. Sigurdsson. 2007. Single tree biomass and volume functions for young Siberian larch trees (*Larix sibirica*) in eastern Iceland. *Icelandic Agricultural Sciences*, 20, 125-135.
16. Haraldsson, Hörður V., Harald U. Sverdrup, Salim Belyazid, **Bjarni D. Sigurdsson**, Guðmundur Halldórsson. 2007. The Systems Analysis and System Dynamic process preparing for assessment of effects of afforestation in Iceland. *Icelandic Agricultural Sciences*, 20: 107-124.

#### 2006

17. Jónsson, Jón Ágúst, Guðmundur Halldórsson and **Bjarni D. Sigurdsson** (2006). Changes in bird life, surface fauna and ground vegetation following afforestation by black cottonwood (*Populus trichocarpa*). *Icelandic Agricultural Sciences* 19: 33-41.

#### 2005

18. Medlyn, B.E., P. Berbigier, R. Clement, A. Grelle, D. Loustau, S. Linder, L. Wingate, P.G. Jarvis, **B.D. Sigurdsson** & R.E. McMurtrie. 2005. The carbon balance of coniferous

forests growing in contrasting climatic conditions: a model-based analysis. *Agricultural and Forest Meteorology* 131: 97-124.

19. **Sigurdsson, Bjarni D.**, Borgthor Magnusson, Asrun Elmarsdottir & Brynhildur Bjarnadottir (2005). Biomass and composition of understory vegetation and the forest floor carbon stock across Siberian larch and mountain birch chronosequences in Iceland. *Annals of Forest Science* 62 (8): 881-888.
20. Gudmundsdóttir, Gerður & **Bjarni D. Sigurdsson**. 2005. Photosynthetic temperature response of mountain birch (*Betula pubescens* Ehrh.) in comparison with three other broadleaved tree species in Iceland. *Icelandic Agricultural Sciences* 18: 43-51.

#### 2004

21. Katri Kostiaainen, Seija Kaakinen, Pekka Saranpää, **Bjarni D. Sigurdsson**, Sune Linder, and Elina Vapaavuori (2004). Effect of elevated [CO<sub>2</sub>] on stem wood properties of mature Norway spruce grown at different soil nutrient availability. *Global Change Biology* 10: 1-13.
22. Einarsson, Stefán Freyr, **Bjarni D. Sigurdsson** & Arnór Snorrason. 2004. Estimating aboveground biomass for Norway spruce (*Picea abies*) in Iceland. *Icelandic Agricultural Sciences* 16-17: 53-63.

#### 2003

23. Bergh, J., M. Freeman, **B.D. Sigurdsson**, S. Kellomäki, K. Laitinen, S. Niinistö, & H. Peltola. 2003. Modelling the short-term effects of climate change on the productivity of selected tree species in Nordic countries. *Forest Ecology and Management* **183**: 327-340.

#### 2002

24. **Sigurdsson, B.D.**, P. Roberntz, M. Freeman, H. Saxe, M. Næss, H. Thorgeirsson & S. Linder 2002. Impact studies on Nordic forests: effects of elevated CO<sub>2</sub> and fertilisation on gas exchange. *Canadian Journal of Forest Research*, **32**:779-788.
25. Snorrason, A., **B.D. Sigurdsson**, G. Guðbergsson, K. Svavarsdottir & Th.H. Jónsson. 2002. Carbon sequestration in forest plantations in Iceland. *Icelandic Agricultural Sciences* **15**: 79-91.

#### 2001

26. **Sigurdsson, B.D.** 2001. Elevated [CO<sub>2</sub>] and nutrient status modified leaf phenology and growth rhythm of young *Populus trichocarpa* trees in a three-year field study. *Trees*, **15**: 403-413.

#### 2000

27. **Sigurdsson, B. D.** & Snorrason, A. 2000. Carbon sequestration by afforestation and revegetation as a means of limiting net-CO<sub>2</sub> emissions in Iceland. *Biotechnology, Agronomy, Society and Environment*, **4** (4): 303-307.
28. **Sigurdsson, B.D.**, H. Thorgeirsson & S. Linder. 2001. Growth and dry-matter partitioning of young *Populus trichocarpa* trees during three years of elevated CO<sub>2</sub> and fertilisation. *Tree Physiology*, **21**: 941-950.
29. Medlyn, B.E., C.V.M. Barton, M. S. J. Broadmeadow, R. Ceulemans, P. de Angelis, M. Forstreuter, M. Freeman, S.B. Jackson, S. Kellomäki, E. Laitat, A. Rey, P. Roberntz, **B.D. Sigurdsson**, J. Strassemeier, K. Wang, P. S. Curtis & P. G. Jarvis. 2001. Elevated

[CO<sub>2</sub>] effects on stomatal conductance in European forest species: a synthesis of experimental data. *New Phytologist*, **149**: 247-264.

#### 1998

30. **Sigurdsson, B. D.**, Á. L. Aradóttir & I. B. Strachan. 1998. Cover and canopy development of a newly established poplar plantation in south Iceland. *Icelandic Agricultural Sciences*, **12**: 35-46.
31. Strachan, I. B., **B. D. Sigurdsson** & J. H. McCaughey. 1998. Soil hydrology at the Gunnarsholt experimental plantation: Measurements and results. *Icelandic Agricultural Sciences*, **12**: 27-34.
32. Strachan, I. B., Ó. Arnalds, F. Pálmason, H. Þorgeirsson, **B. D. Sigurdsson**, H. Sigurðardóttir & G. Novoselac. 1998. Soils of the Gunnarsholt experimental plantation. *Icelandic Agricultural Sciences*, **12**: 15-26.

### In Icelandic or Swedish journals and books with review board (primary publications):

#### 2011

33. Áhrif skógræktar á tegundaauði [*Effects of afforestation on species richness in Iceland*]. *Náttúrufræðingurinn* 81(2): 69-81. Ásrún Elmarsdóttir, **Bjarni Diðrik Sigurðsson**, Edda Sigurðis Oddsdóttir, Arne Fjellberg, Bjarni E. Guðleifsson, Borgþór Magnússon, Erling Ólafsson, Guðmundur Halldórsson, Guðmundur A. Guðmundsson, Guðríður Gyða Eyjólfsdóttir, Kristinn Haukur Skarphéðinsson, María Ingimarsdóttir og Ólafur K. Nielsen.

#### 2009

34. **Sigurdsson, B.D.** 2009. Ecosystem carbon fluxes of *Leymus arenarius* and *Honckenya pebloides* on Surtsey in relation to water availability: a pilot study. *Surtsey Research* 12, 77-80.

#### 2008

35. BOOK: Guðmundur Halldórsson, Edda S. Oddsdóttir, **Bjarni D. Sigurðsson** (eds). 2008. AFFORNORD: Effects of afforestation on ecosystems, landscape and rural development. TemaNord 2008:562, Nordic Council of Ministers, Copenhagen, 120 p.
36. Weselien, J-O., Finér, L., Jónsson, J.Á., Koivusalo, H., Laurén, A. Ranius, T. & **Sigurdsson, B.D.** 2008. Kol, kvæveutlakning och död ved i morgondagens skog. Resultat från Skogforsk 11, 4 p. (In Swedish).

#### 2004

37. **Sigurdsson, B.D** & B. Magnusson. 2004. Frævistfræði alaskalúpínu (Seed ecology of the Nootka lupin). *Náttúrufræðingurinn* 72 (3-4): 110-116. (In Icelandic, English summary).

#### 2003

38. Magnusson, B., S.H. Magnusson & **B.D. Sigurdsson** 2003. Áhrif alaskalúpínu á gróðurfar (*Effects of introduced Nootka lupin (Lupinus nootkatensis) on plant succession in Iceland*). *Náttúrufræðingurinn* 71 (3-4): 98-111. (In Icelandic, English summary).