

# Per-Anders Esseen

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## Personal Data

Born in Dorotea, Västerbotten, Sweden, May 31, 1953.

## Education

Bachelor of Science (Fil. Kand.) in Biology, Umeå University, May 1976.  
Chemistry 40p, Biology 80p, Biostatistics 20p, Human Ecology 10p.  
PhD in Ecological Botany, Umeå University, 7 December 1983. Thesis: Ecology of lichens in boreal coniferous forests with reference to spatial and temporal patterns. Opponent: Dr. Lars-Erik Liljelund, Department of Botany, Stockholm University.  
Docent (Senior Lecturer/Associate Professor) in Ecological Botany, 8 December 1998.

## Research Interests

I have a broad interest in the ecology and conservation of boreal forest plants, with a special focus on epiphytic lichens. My research has been in three specific areas: epiphytic lichen ecology, landscape ecology and small-scale disturbance.

## Professional Experience

Associate Professor (Universitetslektor, 25% research, 75% teaching), Dept. of Ecology and Environmental Science, Umeå University, 1999.01.01-  
Associate Professor (100% research), Dept. of Ecological Botany, Umeå University, 1992-1998. Financed by the Swedish Environmental Protection Agency.  
Assistant Professor (Forskarassistent), Dept. of Ecological Botany, Umeå University, 1985-1992. Faculty financed.  
Research Assistant (Forskningsassistent), Dept. of Ecological Botany, Umeå University, 1976-1978 (50%), 1981-1983 (25%), 1984-1985 (100%).  
Amanuens, Dept. of Ecological Botany, Umeå University, 1976-1981 (50%).

### **Selected presentations and conferences**

Groupe de Recherche en Écologie forestière (GREF), Université du Québec à Montréal, Montréal, Canada, October 1998. Invited paper.

Université du Québec, Campus de Rouyn-Noranda, Canada, October 1998. Invited paper.

Biodiversity in Managed Forests—Concepts and Solutions, Uppsala, Sweden, May 1997. Swedish University of Agricultural Sciences. Paper.

Dept. of Ecology and Systematics, University of Helsinki, Finland, May 1996. Invited paper.

Swedish Biodiversity Centre, Uppsala, Sweden, February 1996. Invited paper.

Skogsveckan, Stockholm, Sweden, March 1993, arranged by Sveriges

Skogsvårdsförbund. Invited paper.

The Second International Lichenological Symposium IAL2, Båstad, Sweden, August-September 1992. Paper.

The Boreal Forests of the World—Ecology, Biodiversity and Sustainable Use, Jokkmokk, Sweden, September-October

1992. Poster and excursion leader.

International Association of Landscape Ecology (IALE) World Congress, Ottawa, Canada, July 1991. Invited paper.

Swedish Society Oikos 9th symposium in Umeå, Sweden, February 1991.

Contributing author.

The XIV International Botanical Congress, Berlin, Germany, July 1987. Poster.

Swedish Society Oikos 3rd symposium in Hällnäs, Sweden, February 1985.

Paper.

British Ecological Society Annual Meeting, Leicester, England, December 1983,

Darwin Centenary Conference, Cambridge, England, July 1982.

Theories in population and community ecology, Uppsala, Sweden, February 1980.

### **Selected Excursions**

Quebec, Canada, October 1998.

Nordic Lichen Society excursion to Grong, Norway, August 1993.

Ontario, Canada, July 1991.

USA (California, Oregon, Washington) and Canada (British Columbia, Alberta), May-June 1990.

Nordic Lichen Society excursion to Oulanka, Finland, July 1981.

### **Professional Duties**

Opponent for Mikko Kuusinen, Dept. of Ecology and Systematics, University of Helsinki, Finland, May 1996. Thesis:

Epiphytic lichen flora and diversity in old growth boreal forests of Finland.

Opponent (2nd) for Inga Elise Bruteig, Dept. of Botany, University of Trondheim, Norway, May 1994. Thesis: Distribu-

tion, ecology and biomonitoring studies of epiphytic lichens on conifers.

Member of the evaluation committee for Tomas Lämås PhD examination, Dept. of Forest Management Planning and

Geomatics, Swedish University of Agricultural Sciences, Umeå, May 1996.  
Thesis: Forest management planning for biodiversity and timber production.  
Evaluation of Sari Pitkänen's PhD dissertation manuscript, Faculty of Forestry, University of Joensuu, Joensuu, Finland, July 1998. Thesis: Diversity of ground vegetation in managed boreal forests in relation to the tree stand and site.  
Organiser (with Dr. Göran Thor and Dr. Jan-Eric Mattsson) of a Nordic symposium and excursion "Nordic Lichens, Current Taxonomical and Ecological Research", Saxnäs, Sweden, August 1991.  
Member of the lichen committee, Threatened Species Unit, Uppsala, 1984-1998.  
Member of expert committee in forestry, Swedish Society for Nature Conservation.  
Prefect for the Dept. of Ecological Botany, Umeå University, 1987-1989.  
Member of the reference group for the project "Monitoring of Forest Ecosystems", included in the Foundation for Strategic Environmental Research (MISTRA) programme: Remote Sensing of the Environment (RESE), 1997-.  
Reviewed papers for: *Annales Botanici Fennici*, *Biological Conservation*, *Ecological Applications*, *Ecography*, *EcoScience*, *Holarctic Ecology*, *Lichenologist*, *Nordic Journal of Botany*, *Silva Fennica*, *SkogsFakta*, *Svensk Botanisk Tidskrift*.  
Member of Advisory Board for *Acta Botanica Fennica* and *Annales Botanici Fennici*.

### **Research Support**

Centre for Environmental Research (CMF), 1990-1999. 286 000 SEK 1999.  
Stiftelsen Oscar och Lili Lamms Minne. 150 000 SEK 1999/00.  
Swedish Environmental Protection Agency (SEPA), 1980, 1982-1998. 540 000 SEK 1998.  
Ebba och Sven Schwartz stiftelse, 1994/1995.  
Board of Forestry 1992.  
World Wide Fund for Nature (WWF), 1983, 1985, 1988, 1990-1994.  
Natural Science Research Council (NFR), 1982-1984.

### **Professional Societies**

British Lichenological Society, Ecological Society of America, International Association of Lichenology, International Association for Vegetation Science, International Canopy Network, Nordic Ecological Society Oikos, Nordic Lichen Society, Society for Conservation Biology.

### **Graduate students**

Mats Rydgård (main supervisor), 1986-1989 (Fil lic). Effect of forest fragmentation on demography of clonal forest herbs.

Bengt-Gunnar Jonsson (main supervisor), 1986-1993 (PhD). Treefall disturbance, succession and diversity in boreal forest floor vegetation.

Karl-Erik Renhorn (main supervisor), 1990-1997 (PhD). Effects of forestry on biomass and growth of epiphytic macrolichens in boreal forests.

Roger Pettersson (assistant supervisor, Dr. Kjell Sjöberg main supervisor), 1990-1997 (PhD). Lichens, invertebrates and birds in spruce canopies. Impacts of forestry. Dept. of Animal Ecology, SLU, Umeå.

Holger Dettki (main supervisor), 1994-. Effects of landscape structure on occurrence and dispersal of epiphytic lichens.

Henrik Hedenås (assistant supervisor, Prof. Lars Ericson main supervisor), 1996-. Cyanobacterial lichens on aspen as indicators of biodiversity in boreal forests.

### **Scientific Publications and Contributions**

19 scientific papers, 25 other publications, 5 manuscripts.

Esseen, P.-A. and Renhorn, K.-E. 1998. Mass loss of epiphytic lichen litter in a boreal forest. *Annales Botanici Fennici* 35: 211-218.

Esseen, P.-A. and Renhorn, K.-E. 1998. Edge effects on an epiphytic lichen in fragmented forests. *Conservation Biology* 12: 1307-1317.

Dettki, H. and Esseen, P.A. 1998. Epiphytic macrolichens in managed and natural forest landscapes: a comparison at two spatial scales. *Ecography* 21: 613-624.

Dettki, H., Edman, M., Esseen, P.A., Hedenås, H., Jonsson, B.G., Kruys, N., Moen, J. and Renhorn, K.E. 1998.

Screening for species potentially sensitive to habitat fragmentation. *Ecography* 21: 649-652.

Jonsson, B.G. and Esseen, P.A. 1998. Plant colonisation in small forest-floor patches: importance of plant group and disturbance traits. *Ecography* 21: 518-526.

Esseen, P.A., Ehnström, B., Ericson, L. and Sjöberg, K. 1997. Boreal forests. *Ecological Bulletins* 46: 16-47.

Renhorn, K.E., Esseen, P.A., Palmqvist, K. and Sundberg, B. 1997. Growth and vitality of epiphytic lichens I. Responses to microclimate along a forest edge-interior gradient. *Oecologia* 109: 1-9.

Sundberg, B., Palmqvist, K., Esseen, P.-A. and Renhorn, K.E. 1997. Growth and vitality of epiphytic lichens II. Modelling of carbon gain using field and laboratory data. *Oecologia* 109: 10-18.

Esseen, P.A., Renhorn, K.E. and Pettersson, R.B. 1996. Epiphytic lichen biomass in managed and old-growth boreal forests: effect of branch quality. *Ecological Applications* 6: 228-238.

Pettersson, R.B., Ball, J.P., Renhorn, K.E., Esseen, P.A. and Sjöberg, K. 1995.

Invertebrate communities in boreal forest canopies as influenced by forestry and lichens with implications for passerine birds. *Biological Conservation* 74: 57-63.

Renhorn, K.E. and Esseen, P.A. 1995. Biomass growth in five alectorioid lichen epiphytes. *Mitteilungen der Eidgenössischen Forschungsanstalt für Wald, Schnee und Landschaft* 70: 133-140.

Esseen, P.A. 1994. Tree mortality patterns after experimental fragmentation of an old-growth conifer forest. *Biological Conservation* 68: 19-28.

Esseen, P.A., Ehnström, B., Ericson, L. and Sjöberg, K. 1992. Boreal forests - the focal habitats. In: *Ecological Principles of Nature Conservation*, L. Hansson (ed.). Elsevier Applied Science, London, pp 252-325.

Jonsson, B.G. and Esseen, P.A. 1990. Treefall disturbance maintains high bryophyte diversity in a boreal spruce forest. *Journal of Ecology* 78: 924-36.

Esseen, P.A. 1985. Litter fall of epiphytic macrolichens in two old *Picea abies* forests in Sweden. *Canadian Journal of Botany* 63: 980-987.

Esseen, P.A. 1983. Ecology of lichens in boreal coniferous forest with reference to spatial and temporal patterns. PhD thesis, Department of Ecological Botany, University of Umeå. 147 pp.

Sandberg, G., Hällgren, J.E. and Esseen, P.A. 1982. Effects of HF on the budburst of *Betula tortuosa* (Ledeb). *Fluoride* 15: 124-131.

Esseen, P.A. 1981. Host specificity and ecology of epiphytic macrolichens in some central Swedish spruce forests. *Wahlenbergia* 7: 73-80.

Esseen, P.A., Ericson, L., Lindström, H. and Zackrisson, O. 1981. Occurrence and ecology of *Usnea longissima* in central Sweden. *Lichenologist* 13: 177-190.

### **In preparation**

Esseen, P.A., Dettki, H., Edenius, L., and Sehlstedt, Å. Application of vegetation maps for analysis of forestry impact on landscape structure in northernmost Sweden. Prepared for Photogrammetric Engineering and Remote Sensing.

Esseen, P.A. and Jonsson, P.A. A simple method for estimation of abundance of alectorioid lichens. Prepared for *Journal of Applied Ecology*.

Esseen, P.A. Long-term change in standing crop of the threatened pendulous lichen *Usnea longissima*.

Esseen, P.A. Effects of area and isolation on epiphytic lichens in a heterogeneous landscape.

Dettki, H., Klintberg, P. & Esseen, P.A. Are epiphytic lichens in young forests limited by local dispersal? Prepared for *EcoScience*.

### **Abstracts**

Esseen, P.A. 1997. Edge effects on epiphytic lichens in fragmented forests. *Biodiversity in Managed Forests – Concepts and Solutions*, May 29-31 1997, Abstracts. Swedish University of Agricultural Sciences. Uppsala, Sweden.

Sundberg, B., Renhorn, K.E., Palmqvist, K. and Esseen, P.A. 1994. The physiology and ecophysiology of the green algal lichens *Lobaria pulmonaria* and *Platismatia glauca*. –Fifth International Mycological Congress, Abstracts. August 14-24, Vancouver, British Columbia, Canada, p. 214.

Renhorn, K.-E. and Esseen, P.A. 1994. Growth rates of five pendent epiphytic

lichens. – Fifth International Mycological Congress, Abstracts. August 14-24, Vancouver, British Columbia, Canada, p. 178.

Esseen, P.A. and Renhorn, K.-E. 1992. What factors determine epiphytic lichen abundance in managed and primeval spruce forests? – The Second International Lichenological Symposium IAL2, Båstad, 30 August - 4 September 1992. Abstracts. Lund, Sweden, p. 31.

Esseen, P.A. 1991. Plant response in a boreal forest fragmentation experiment. World Congress of Landscape Ecology, 21-25 July 1991. International Association for Landscape Ecology. Abstracts, Ottawa, Canada, p. 44.

Esseen, P.A. 1987. Ecology of the spruce forest lichen *Usnea longissima*. In: Abstracts of the XIV International Botanical Congress, Berlin, July 24 to August 1, 1987, W. Greuter, B. Zimmer and H.-D. Behnke (eds). Berlin, p. 319.

### **Other publications**

Esseen, P.A., Hedenås, H. and Ericson, L. 1999. Epifytiska lavar som mångfaldsindikatorer. Skog och Forskning, nr 2, in press.

Esseen, P.A. 1998. Epiphyte research in taiga forests. What's Up. The Newsletter of the International Canopy Network 4(2): 8-9.

Esseen, P.A. and Dettki, H. 1993. Lägesbestämning av växtlokaler med hjälp av satelliter. Svensk Botanisk Tidskrift 87: 65-69.

Esseen, P.A. 1993. Artfaktablad över *Cladonia polycarpoides*, *Melanelia elegantula*, *M. laciniatula*, *Punctelia reddenda*, *P. subrudecta*, och *Ramalina calicaris*. I: Ingelög, T., Thor, G., Hallingbäck, T., Andersson, R. och Aronsson, M. (red.), Floravård i jordbrukslandskapet, skyddsvärda växter. SBT-förlaget, Lund, sid 409, 419-420, 426-428.

Esseen, P.A. 1991. Långskäggets ekologi och utbredning i Norden. In: Näsström, B., Tedebrand, J.-O. & Wallwik, J. (eds.), Långskägg, *Usnea longissima*, pp. 8-12. Sundsvall Naturskyddsförening, Sundsvall.

Söderström, L. and Esseen, P.A. 1991. Undersökning av mossor och lavar i Gråberget-Byvattnet-området i Jämtland. Myrinia 1: 20-29.

Databanken för hotade arter - flora. 1991. Hotade växter i Sverige 1990. Kärlväxter, mossor, lavar och svamparförteckning och länsvis förekomst. SBT-förlaget, Lund.

Arvidsson, L., Esseen, P.A., Moberg, R. och Thor, G. (Floravårdskommittén för lavar) 1987. Preliminär lista över hotade lavar i Sverige. Svensk Botanisk Tidskrift 81: 237-256.

Esseen, P.A. 1987. Artfaktablad över *Cladonia parasitica* och *Ramalina sinensis*. – I: Ingelög, T., Thor, G. och Gustafsson, L. (red.), Floravård i skogsbruket. Del 2 artdel (2:a uppl.). Skogsstyrelsen, Jönköping, sid 317, 364.

Esseen, P.A. 1984. Lavar och skogsbruk. Skogsfakta; Flora, Fauna, Miljö, nr 5.

Esseen, P.A. 1984. Lavfloran. I: Linder, P., Kirjesålandet. En skogsbiologisk inventering av ett fjällnära urskogsområde i Västerbottens län. Institutionen för skoglig ståndortslära, Sveriges lantbruksuniversitet, Umeå.

Esseen, P.A. 1983. An analysis of horizontal distribution patterns of epiphytic

lichens within three *Picea abies* forests. – In: Esseen, P.A., PhD thesis (15).

Esseen, P.A. Species composition and diversity in a successional sequence of dry lichen-rich pine forests in northern Sweden. In: Esseen, P.A., PhD thesis (15).

Söderström, L. and Esseen, P.A. 1983. Kryptogaminventering av Ysberget och Laxtjärnsberget. I: Linder, P., Naturskogen på Ysberget och Laxtjärnsbergeten skogsbiologisk inventering, sid. 90-102. Länsstyrelsen i Gävleborgs län, naturvårdsenheten, rapport 1983:1.

Esseen, P.A. and Ericson, L. 1982. Granskogar med långskägglav i Sverige. Statens Naturvårdsverk PM 1513, Stockholm.

Ericson, L. and Esseen, P.A. 1981. Långskägg. Sveriges Natur Årsbok 1981: 81-83.

Hällgren, J.E., Esseen, P.A. and Sandberg, G. 1978. A lichen and technique study in a fluoride polluted area. – In: J.-E.

Hällgren, PhD thesis. Department of Plant Physiology, University of Umeå, 36 pp.

Esseen, P.A., Hällgren, J.-E. and Sandberg, G. 1978. Ekofysiologiska studier av emissionseffekter på vegetationen runt kulsinterverket i Svappavaara. Ekologisk botanik, Umeå universitet, 45 sid.

Esseen, P.A., Hällgren, J.E. and Sandberg, G. 1977. Ekofysiologiska studier av emissionseffekter på vegetationen runt kulsinterverket i Kiruna. Ekologisk Botanik, Umeå universitet, 77 sid.