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NORWEGIAN INSTITUTE OF BIOECONOMY RESEARCH

CURRICULUM VITAE

PERSONAL INFORMATION

Name	**MÆHLUM, TROND**
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Tel mob	+47 412 38 270
Postal addr	NIBIO, Frederik A. Dahls vei 20, N-1430 Ås, Norway
Nationality	Norwegian
Year of birth	1964
Gender	Male
Scientific degree	PhD (Dr.scient.)
Present position	Senior research scientist Hydrology and Water Environment at NIBIO Norwegian Institute of Bioeconomy Research, Climate and Environment Division, Ås

KEY QUALIFICATIONS

Environmental engineering, specialising in water protection management hydrogeology and aquatic chemistry. Experience in planning, design and monitoring of natural systems for treatment of point sources and diffuse pollution in cold climates. Landfill leachates, domestic wastewater and urban runoff. Particular interest in treatment wetlands, ponds, soil infiltration and biological filters. Investigation of filter media and treatment processes in laboratory, mesocosm and full-scale. University lecturer and examiner in environmental engineering and water resource management.

EDUCATION AND TRAINING

Dates (from – to)

1992 - 1998. Agricultural University of Norway (NMBU): Dr.scient.
1987 - 1991. Agricultural University of Norway (NMBU): Cand.agric.
1985 - 1989. University of Oslo: Cand.mag.

WORK EXPERIENCE

Dates (from – to)

7.2015 – 2.2016. NIBIO Climate and Environment, Head of Department
1.2015 – 6.2015. Bioforsk Environment, Head of Department Urban greening and environmental engineering/Senior researcher
2011 – 2014. Bioforsk Soil and Environment Division, Head of Department Integrated Environmental technology/Senior researcher
2006 – 2010. Bioforsk Soil and Environment Division, Head of Department Ecological Engineering/Senior researcher
2000 – 2005. Jordforsk, Research manager
1991 – 2000. Jordforsk, Research scientist

PUBLICATIONS

>40 Peer reviewed scientific publications
>40 Other scientific publications (proceedings, books etc.)
>60 Technical reports

PERSONAL SKILLS AND COMPETENCES

Mother tongue	Norwegian
Other languages	English
Organisational skills	Management of projects and departments

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Peer reviewed scientific publications

1. Knutsen, H., **Mæhlum, T.**, Haarstad, K., Slinde, G.A., Arp, H.P. 2019. Leachate emissions of short- and long-chain perand polyfluoralkyl substances (PFASs) from various Norwegian landfills. Environmental Science: Processes & Impacts Volum 21.(11) s. 1970-1979. http://dx.doi.org/10.1039/c9em00170k
2. Paruch, A., **Mæhlum, T.**, Eltun, R., Tapu, E., Spinu, O. 2019. Green wastewater treatment technology for agritourism business in Romania. Ecological Engineering: The Journal of Ecotechnology ;Volum 138. s. 133-137. http://dx.doi.org/10.1016/j.ecoleng.2019.07.005
3. Schmidt, I., French, H.K., **Mæhlum, T.** 2019. Infiltrasjon av urbant overvann i grøntanlegg. Vann ;Volum 54.(2) s. 89-101
4. Hanslin, H.M, **Mæhlum, T.**, Sæbø, A. 2018. The response of Phragmites to fluctuating subsurface water levels in constructed stormwater management systems. Ecological Engineering: The Journal of Ecotechnology, Volum 106, p 385-391. http://dx.doi.org/10.1016/j.ecoleng.2017.06.019
5. Krystad, R., Paruch, A., Paruch, L., **Mæhlum, T.** 2018. Gjenåpning av byvassdrag: forekomst, kilder og rensing av E.coli i Teglverksdammen i Hovinbekken, Oslo. *Vann* 2017 (4) s. 373-386
6. **Mæhlum, T.** og G.R. Hensel. 2017. Har infiltrasjonsanlegg i egnede masser lang levetid? *Vann* 2017 ;Volum 52.(2) s. 171-180
7. Paruch, L., Paruch, A., Blankenberg, A.G.B., Haarstad, K., **Mæhlum, T.** 2017. Norwegian study on microbial source tracking for water quality control and pollution removal in constructed wetland treating catchment run-off. *Water Science and Technology* 2017 ;Volum 76.(5) s. 1158-1166. http://dx.doi.org/10.2166/wst.2017.303
8. Paruch A.M., **Mæhlum** T., Haarstad K., Blankenberg A-G.B., Hensel G. 2016. Performance of constructed wetlands treating domestic wastewater in Norway over a quarter of a century – Options for nutrient removal and recycling. In: Vymazal J. (ed) Natural and Constructed Wetlands. Springer International Publishing Switzerland, pp. 41-55. DOI 10.1007/978-3-319-38927-1_3. http://dx.doi.org/10.1007/978-3-319-38927-1
9. Paruch, L., A.M. Paruch, A.G. Blankenberg, M. Bechmann & T. **Mæhlum**. 2015. Application of host-specific genetic markers for microbial source tracking of faecal water contamination in an agricultural catchment. Acta Agriculturae Scandinavica – Section B 2015; Volum 65, 164-172. http://dx.doi.org/10.1080/09064710.2014.941392
10. Paruch, A., T. **Mæhlum** and L.J. Robertson 2014. Changes in microbial quality of irrigation water under different weather conditions in Southeast Norway. *Environmental Processes*, 2(1), 115-124. http://dx.doi.org/10.1007/s40710-014-0054-2
11. Haarstad, K. & T. **Mæhlum**. 2013. Tracing solid waste leachate in groundwater using δ13 C from dissolved inorganic carbon. *Isotopes in environmental and health studies*, 49(1), 48-61. http://dx.doi.org/10.1080/10256016.2012.668902
12. Okkenhaug, G., G.D. Breedveld, T. Kirkeng, M. Lægreid, T. **Mæhlum** & J. Mulder. 2013. Treatment of Air Pollution Control residues with iron rich waste sulfuric acid: Does it work for antimony (Sb)? Journal of Hazardous Materials 2013 (248-249), 159-166. http://dx.doi.org/10.1016/j.jhazmat.2012.12.041.
13. Haarstad, K., H. J. Bavor & T. **Mæhlum.** 2012. Organic and metallic pollutants in water treatment and natural wetlands: a review. Water Science & Technology, (65) 1, 76–99. http://dx.doi.org/10.2166/wst.2011.831
14. Haarstad, K. & T. **Mæhlum**. 2012. Tracing solid waste leachate in groundwater using δ13 C from dissolved inorganic carbon. Isotopes in Environmental and Health Studies, 1-14. http://dx.doi.org/10.1080/10256016.2012.668902
15. Paruch A.M. & **Mæhlum** T. 2012. Specific features of Escherichia coli that distinguish it from coliform and thermotolerant coliform bacteria and define it as the most accurate indicator of faecal contamination in the environment. Ecological Indicators, 23, 140-142. http://dx.doi.org/10.1016/j.ecolind.2012.03.026
16. Søvik, A.K., N. Syversen, A.G.B. Blankenberg & T. **Mæhlum**. 2012. Retention of agricultural surface runoff in a cold climate vegetative buffer zone - effect of vegetation and season. VATTEN – Journal of Water Management and Research (68) 2, 85-96.
17. Paruch, A. M., T. **Mæhlum**, H. Obarska-Pempkowiak, M. Gajewska, E. Wojciechowska & A. Ostojski. 2011. Rural domestic wastewater treatment in Norway and Poland: experiences, cooperation and concepts on the improvement of constructed wetland technology. Water Science & Technology, (63) 4, 776–781. http://dx.doi:10.2166/wst.2011.308
18. Elsaesser, D., A.G.B. Blankenberg. A. Geist, T. **Mæhlum** & R. Schulz. 2011. Assessing the influence of vegetation on reduction of pesticide concentration in experimental surface flow constructed wetlands: application of the toxic units approach. Ecological Engineering ,37: 955-962. doi: http://dx.doi.org/10.1016/j.ecoleng.2011.02.003
19. Skjønsberg, K.H., T. Krogstad, T. **Mæhlum** & P.D. Jenssen. 2011. Anrikning av fosfor i filterbedanlegg – en studie av tre anlegg på Østlandet. VANN, 46 (1): 15-27.

20. Jenssen, P., Krogstad, T., Paruch, A., **Mæhlum**, T., Adam, K., Arias, C., Heistad, A., Jonsson, L., Hellström, D., Brix, H., Yli-Halla, M., Vråle, L. & Valve, M. 2010. Filter bed systems treating domestic wastewater in the Nordic countries – Performance and reuse of filter media. Ecological Engineering, 36 (12):1651-1659. doi: http://dx.doi.org/10.1016/j.ecoleng.2010.07.004

21. Haarstad, K. & **Mæhlum**, T. 2009. Rensing av miljøgifter i sigevann fra avfallsdeponier - resultater fra en screeninganalyse som omfatter fire renseanlegg. VANN 44(2):178-186.

22. Haarstad, K. & **Mæhlum**, T. 2008. Pesticides in Norwegian landfill leachates. The Open Environmental & Biological Monitoring Journal, 1: 8-15. doi: http://dx.doi.org/10.1061/(ASCE)0733-9372(2007)133:6(659)

23. Søvik, A.K., Syversen, N. & **Mæhlum**, T. 2008. Hvordan ulik vegetasjon påvirker renseprosesser i vegetasjonssoner i jordbrukslandskapet. VANN, 4 (32): 111-123.

24. Haarstad, K. & **Mæhlum**, T. 2007. Electrical Conductivity and Chloride Reduction in Leachate Treatment Systems. Journal of Environmental Engineering, 133 (6): 659-664. doi: http://dx.doi.org/10.1061/(ASCE)0733-9372(2007)133:6(659)

25. Jenssen, P.D., T. **Mæhlum**, T. Krogstad and L. Vråle. 2005. High Performance Constructed Wetlands for Cold Climates. Journal of Environmental Science and Health, 40:1343-1353. doi: http://dx.doi.org/10.1081/ESE-200055846

26. Haarstad, K., T. **Mæhlum** & T. Haraldsen. 2004. Funn av plantevernmidler i sigevann fra avfallsdeponier for kommunalt avfall. VANN, 29 (3/4): 247-253.

27. **Mæhlum**, T. & P.D. Jenssen. 2003. Design and performance of integrated subsurface flow wetlands in cold climate. In: Ü. Mander and P.D. Jenssen (eds): Constructed wetlands for wastewater treatment in cold climates. Advances in Ecological Sciences, 11: 69-86. WIT Press, Southampton, UK. ISBN: 978-1-85312-651-2

28. Haarstad, K., T. **Mæhlum**, T. Hartnik og S. Turtumøygard. 2003. Sammensetning av sigevann fra avfallsdeponier fra kommunalt avfall i Norge. VANN, 38 (3): 286-300.

29. Zhu, T. & T. **Mæhlum**. 2003. Nitrogen removal in light-weight aggregate pre-treatment filter columns and mesocosm wetland cells. In: Ü. Mander and P.D. Jenssen (eds): Constructed wetlands for wastewater treatment in cold climates. Advances in ecological sciences, 11: 273-297. WIT Press, Southampton, UK. ISBN: 978-1-85312-651-2

30. Zhu, T., T. **Mæhlum**, P.D. Jenssen & T. Krogstad. 2003. Phosphorus sorption characteristics of a light-weight aggregate. Wat. Sci. Tech., 48 (5): 93-100. ISBN-10: 1853126519

31. Haarstad, K. & T. **Mæhlum.** 1999. Important aspects of long-term production and treatment of municipal solid waste leachtate. Waste Management & Research, 17: 470-477. doi: http://dx.doi.org/10.1034/j.1399-3070.1999.00087.x

32. **Mæhlum**, T. and P. Stålnacke. 1999. Removal efficiency of three cold-climate constructed wetlands treating domestic wastewater: effects of temperature, seasons, loading rates and input concentrations. Wat. Sci. Tec. 40 (3): 273-281. doi: http://dx.doi.org/10.1016/S0273-1223(99)00441-2

33. **Mæhlum**, T. 1998. Wetlands for treatment of landfill leachates in cold climates. In: G. Mulamoottil, E.A.. McBean and F. Rovers (eds.). Constructed wetlands for the treatment of landfill leachates. CRC Lewis Publishers, NY, USA, 33-46. ISBN: 9781566703420

34. **Mæhlum**, T. & P.D. Jenssen. 1998. Use of constructed wetlands in Norway. In: Constructed wetlands for wastewater treatment in Europe, J. Vymazal, H. Brix, P.F. Cooper, M.B. Green and R. Haberl (Eds.), Backuys Publishers, Leiden, The Netherlands. ISBN 90-73348-72-2, 207-216.

35. **Mæhlum**, T., W.S. Warner, P. Stålnacke & P.D. Jenssen. 1998. Leachate treatment in extended aerated lagoons and constructed wetlands in Norway. In: G. Mulamoottil, E.A. McBean and F. Rovers (eds.). Constructed wetlands for the treatment of landfill leachates. CRC Lewis Publishers, NY, USA 151-163. ISBN: 9781566703420

36. Jenssen, P.D., T. Krogstad & T. **Mæhlum.** 1997. Wastewater treatment by aerated ponds and constructed wetlands in Norwegian climate - Results and design considerations. In: Etnier, C. and B. Guterstam (eds): Ecological engineering for wastewater treatment. 2ed. CRC Press, Inc. USA, 237-250.

37. Wittgren, H.B. & T. **Mæhlum**. 1997. Wastewater treatment wetlands in cold climates. Wat. Sci. Tech., 35 (5): 45-53. doi: http://dx.doi.org/10.1016/S0273-1223(97)00051-6

38. Zhu, T., P.D. Jenssen, T. **Mæhlum** & T. Krogstad. 1997. Phosphorus sorption and chemical characteristics of light-weight aggregates (LWA) - potential filter media in treatment wetlands. Wat. Sci. Tech., 35 (5): 103-108. doi: http://dx.doi.org/10.1016/S0273-1223(97)00058-9

39. Jenssen, P.D., T. **Mæhlum**, R. Roseth, B. Braskerud, N. Syversen, A. Njøs & T. Krogstad. 1995. The Potential of self-purifying measures for controlling nutrient inputs. Marine Pollution Bulletin, 29: 420-425. doi: http://dx.doi.org/10.1016/0025-326X(94)90665-3

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40. **Mæhlum**, T. 1995. Treatment of landfill leachate in on-site lagoons and constructed wetlands. Wat. Sci. Tech., 32 (3): 95-101. doi: http://dx.doi.org/10.1016/0273-1223(95)00613-3

41. **Mæhlum**, T., P.D. Jenssen & W.S. Warner. 1995. Cold climate constructed wetlands. Wat. Sci. Tech., 32 (3): 95-101. doi: http://dx.doi.org/10.1016/0273-1223(95)00609-5

42. Jenssen, P.D., T. **Mæhlum** & T. Krogstad. 1994. Potential use of constructed wetlands for wastewater treatment in northern environments. Wat. Sci. Tech., 28 (10): 149-157.