

CURRICULUM VITAE

Personal details

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| Name | Johannes (Hans) Wolkers |
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| Nationality | Dutch |
| Civil status | married, 2 children |

Academic qualifications

1993 Ph.D. in physiology and ecotoxicology, Utrecht University, The Netherlands.
Thesis title: "Undernutrition in wild boar (*Sus scrofa*) and red deer (*Cervus elaphus*).
Tissue composition in relation to nutritional status."

1988 M.Sc. in biology, Agricultural University of Wageningen, The Netherlands.

Courses: physical chemistry, organic chemistry, biochemistry, mathematics, statistics, meteorology, biophysics, geology, animal physiology, anatomy, microbiology, genetics, fisheries, aquatic ecology, marine biology, ecotoxicology, experimental pathology.

Professional experience

2017-present: Academic teacher in writing skills at Radboud University Nijmegen (parttime), The Netherlands

Together with colleagues I'm responsible for the development of a new series of academic courses in scientific writing and journalistic/popular scientific writing for specific audiences.

2014-2017: Academic teacher at University College Aeres in Almere, The Netherlands

Courses: anatomy, histology, animal physiology, plant physiology, behavioral ecology, nutrition, scientific writing and journalistic/popular scientific writing.

2011-present: Self-employed at Wild Frontiers BV.

As a self-employed professional, I deal with a variety of topics related to science writing /- journalism, (conservation) photography, movie and documentary making. See also www.wildfrontiers.nl and www.science-explained.nl.

2009-2011: Science editor for Wageningen University Magazine *Resource* and Wageningen Alumnus Magazine *Wageningen World*.

In this position I was responsible to signal and report about scientific developments in a variety of fields, including human nutrition and environmental sciences. Writing of news articles as well as background articles were part of my professional tasks.

2000-2009: Senior scientist ecotoxicology, with focus on arctic physiology, Norwegian Polar Institute, Tromsø, Norway.

My research activities included a range of studies where the effect of contaminant exposure on the physiology of arctic fish and mammals was investigated. My scientific work was the basis to advise the Norwegian Ministry of Environment about issues regarding international policy on a variety of chemical pollutants. In addition, I was responsible for designing and carrying out an extensive environmental contaminant monitoring program. In addition, I supplied data for the Arctic Monitoring and Assessment Program (AMAP).

1995-2000: Senior scientist ecotoxicology, Akvaplan-niva, Tromsø, Norway.

In this position I was a consultant on pollution issues and in addition I was responsible for establishing and conducting eco-toxicological research in a variety of arctic vertebrates, i.e. arctic char, different seal and sea bird species. Bioaccumulation, contaminant toxicity, and monitoring contaminant-induced effects on the physiology were central themes.

1990-1995: Research scientist physiology and ecotoxicology, Utrecht University, Department of Internal Medicine and Nutrition, Utrecht, The Netherlands.

During this period I designed and carried out research on physiology of starvation in wild boar and red deer. In addition, eco-toxicological studies were carried out on these animals. The results of the study were used to manage wild mammal population in a more natural way, and stop the common practice of supplementary feeding. Part of this work resulted in my Ph.D. thesis in 1993.

1988-1990: Research scientist wildlife management and physiology, Institute of Forestry and Nature Research, Arnhem, The Netherlands.

In this position I was responsible for the design, logistics, field studies, and data management of ongoing research projects concerning management and physiology of large mammals, i.e. roe deer, red deer, and wild boar.

Professional services

Teaching in Norway

- A. For several years I was responsible for designing and teaching 2 BSc ecotoxicology courses: 1) Safety and environmental engineering and 2) Societal safety and environment, both from the Faculty of Engineering and Economics, Tromsø University College.
- B. For the project '*Biotransformation of halogenated organic compounds and associated biological effects in arctic seabirds. Norwegian Research Council 2006-2009*' I had a shared responsibility for 2 Ph.D. students and 2 MSc students.

Management-related activities

During my M.Sc. I designed a management plan for National Park 'De Meinweg'.

In Norway I have been the leader of a scientific team developing ecological quality indicators (EcoQ's) for pollution exposure in the Barents Sea ecosystem. In close collaboration with NPs management department and several institutes in Norway (Akvaplan.niva, Niva, and the Institute for Marine Research in Bergen), we investigated and reported about the possibilities to implement EcoQ's to establish pollution exposure in marine mammals and fish.

Language skills

Dutch: fluent

English: excellent

Norwegian: good

French: good

German: fair

Selection of popular scientific articles and books

A brief selection of publications, related to travel, conservation and environment.

For a more extended overview, please see <http://zbb.aquabrowser.be/authors/Wolkers,%20Hans,>.

Books:

Silent witnesses. Three decades after Chernobyl's nuclear disaster. Prize winner of the International Photography award, category documentary books (www.chernobylwitness.com).

Brief selection of popular scientific articles:

1. PCB's op de Noordpool (PCB's in the Arctic). *Arts en Auto*, March 1998.
2. Extra kwetsbaar (Particularly vulnerable). *Trouw (newspaper)*, April 1998
3. Het Noordpoolgebied: een extra kwetsbare wildernis. (The Arctic: an extra vulnerable wilderness). *Grasduinen*, December 1998.
4. Vuilnisvat Noordpool. (Garbage can Arctic). *Natuurwetenschap en techniek*, December 1998.
5. We vermoorden de Noordpool. (We kill the Arctic). *De Telegraaf (Newspaper)*, June 1999.
6. Harp seals and toxic pollutants. Are there health implications? *WWF Arctic Bulletin no 2* 1999.
7. Chemical consumption. *BBC Wildlife*, July 2000.
8. Arctic 1 *De Telegraaf (Newspaper)*, *Science supplement*, Oktober 2001
9. Arctic 2 *De Telegraaf (Newspaper)*, *Science supplement*, December 2001

10. De vuilnisbelt van Europa (The garbage can of Europe) *EOS*, March 2002.
11. Spitsbergen. De koude kust. (Spitsbergen. The cold coast) *Grasduinen*, December 2002.
12. Ijsberen. (Polar bears) *Grasduinen*, Januari 2003.
13. Zonder zalm ook mgeen beren. *Natuurwetenschap en techniek*, Maart 2003.
14. Ijsbeer incasseert klap na klap. De jacht, de vervuiling en het smelten. (The polar bear gets hit after hit. Hunting, pollution and melting.) *Natuurwetenschap en Techniek*, November 2003.
15. Oerbos in de versnipperaar. *Natuurwetenschap en Techniek*, June 2005.
16. Boskappers doen Tasmanië de duivel aan. *EOS*, december 2006.
17. Paradijs in nood (Threats to Christmas island's unique nature). *EOS*, december 2008.
18. Het groene werkpaard (about culturing algae for oil). *Natuurwetenschap en Techniek*, November 2010.
19. De paling ontglipt ons. The eel slips out of our hands. *Wageningen World* nr. 2 2011.
20. Woestijn onder water. (See turtles in peril). *Quest*, May 2013.
21. Veelzijdig fossiel. (Horseshoe crabs save lives). *Quest*, Januari 2014.

Review and advisory services

Reviewer for:

- Annual course “Marine pollution in the Arctic and adjacent environments”, (BIO 405) of the University of Tromsø.
- The Northern Contaminants Program, Canada
- The Norwegian Research Council, project applications.
- Advisor for WWF's toxics program on contaminant issues

Journal referee for:

- Marine Environmental Research
- Science of the Total Environment
- Chemosphere
- Environmental Science and Technology
- Comparative Biochemistry and Physiology C
- Journal of Veterinary Pharmacology and Therapeutics

Externally funded projects

- Disruption of hormone metabolism in seals: contaminant-induced effects on hormone biosynthesis. Norwegian Research Council 1998-2000.
- Endocrine disruption in arctic top-predators. Synergistic effects of contaminant mixtures on steroid hormone physiology. Norwegian Research Council 2000-2003.
- Historical comparison of polar bear contaminant exposure. WWF 2002
- Pollution in killer whales. SFT 2002
- Lipid cycles in relation to contaminant-induced biological effects in polar fox. Norwegian Research Council 2002-2005
- Pollution in killer whales. Norwegian Research Council 2003-2004
- Pollution in killer whales. WWF November 2005
- Biotransformation of halogenated organic compounds and associated biological effects in arctic seabirds. Norwegian Research Council 2006-2009. This project involves 2 Ph.D. and several master students.

Past national and international collaborations

- Utrecht University, Department of Pharmacology, The Netherlands.
- Norwegian University of Science and Technology, Trondheim.
- The Norwegian College of Fishery Science Tromsø.
- Department of Fisheries and Oceans (DFO), Institute Maurice Lamontagne, Department of marine mammals, Canada.
- MTM Research Center, Örebro, Sweden
- University of Louvain, Belgium
- Environment Canada, Canada
- IVM Institute for Environmental Studies, VU, Amsterdam

Popular science publicity services

- Poisoned seals. **New Scientist**, July 1999: 12.
- Harp seals and toxic pollutants. Are there health implications? **WWF Arctic bulletin** 2, 1999: 16.
- Arktiske dyr forgiftes. **Bellona Magasin** 4, 1999: 34-35.

- Rekord mye gift i sel ved Svalbard. **Aftenposten**, August 1999.
- **NRK news television**. Norway, August 1999.
- **NRK news radio**. Norway, August 1999.
- **BBC news radio**. UK, September 2002.
- Killer whale's toxic load. **WWF Arctic bulletin** 4, 2005
- **BBC news radio**. UK, December 2005
- **BBC News**. Arctic orcas highly contaminated, December 2005
- **CNN**. Group orcas most polluted arctic animal, December 2005
- **ABC News**. Killer whales ranked the most toxic arctic mammal. December 2005
- **Radio 2 news bulletin**, Netherlands, December 2005
- **National Geographic News**. Killer whales are most toxic arctic animals, study reports. December 2005.
- **That's one weird tooth and other bulletins on the elusive narwhal. Science News 169, March 2006, 186-188.**

List of scientific publications

1. Routti H., Helgason L.B., Arukwe A., **Wolkers J.**, Heimstad E.S., Harju M., Berg V., and Gabrielsen G.W. 2013. Effect of reduced food intake on toxicokinetics of halogenated organic contaminants in herring gull (*Larus argentatus*) chicks. *Environmental Toxicology and Chemistry* 32: 156-164.
2. Helgason L.B., **Wolkers J.**, Fuglei E., Ahlstrøm O., Muir D., and Jørgensen E.H. 2013. Seasonal emaciation causes tissue redistribution and an increased potential for toxicity of lipophilic pollutants in farmed arctic fox (*Vulpes lagopus*). *Environmental Toxicology and Chemistry* 32: 1784-1792.
3. Helgason L.B., Arukwe A., Gabrielsen G.W., Harju M., Hegseth M.N., Heimstad E.S., Jørgensen E.H., Mortensen A.S., and **Wolkers J.** 2010. Biotransformation of PCBs in Arctic seabirds: Characterization of phase I and II pathways at transcriptional, translational and activity levels. *Comp. Biochem. Physiol.C* 152: 34-41.
4. Sonne C., **Wolkers J.**, Riget FF., Beck Jensen BE., Teilmann J., Jenssen BJ, Fuglei E., Ahlstrøm Ø., Dietz, R, Muir DCG, and Jørgensen E. 2009. Mineral density and biomechanical properties from bone tissue of male arctic foxes (*Vulpes lagopus*) exposed to organochlorine contaminants and emaciation. *Comp. Biochem. Physiol. C*. 149: 97-103.
5. **Wolkers H.**, Boily F., Fink-Gremmels J., van Bavel B., Hammill M.O., and Primicerio R. 2008. Tissue-specific contaminant accumulation and associated effects on hepatic serum analytes and cytochrome P450 enzyme activities in hooded seals (*Cystophora cristata*) from the Gulf of St. Lawrence. *Archives of Environmental Contamination and Toxicology* 56: 360-370.
6. **Wolkers H.**, Krafft B.A., van Bavel B., Helgason L.B., Lydersen C., and Kovacs K.M. 2008. Biomarker responses and decreasing contaminant levels and in ringed seals (*Pusa hispida*) from Svalbard, Norway. *Journal of Toxicology and Environmental Health, Part A* 71:1009-1018.
7. Sonne C., **Wolkers J.**, Leifsson P.S., Jenssen B.M., Fuglei E., Ahlstrøm Ø., Dietz, R, Kierkegaard M., Muir D.C.G., and Jørgensen E. 2008. Organochlorine-induced histopathology in liver and kidney tissue of arctic fox (*Vulpes lagopus*). *Chemosphere* 71:2114-1224.
8. **Wolkers J.**, Corkeron P.J., van Parijs S.M., Similä T., and van Bavel B. 2007. Accumulation and transfer of contaminants in killer whales (*Orcinus orca*) from Norway: indications for contaminant metabolism. *Environmental toxicology and Chemistry* 26: 1582-1590.
9. Borgå K., Hop H., Skaare, J.A., **Wolkers J.**, and Gabrielsen G.W. 2007. Selective bioaccumulation of chlorinated pesticides and metabolites in Arctic seabirds. *Environmental Pollution* 145: 545-553.
10. **Wolkers H.**, van Bavel B., Ericson I., Skoglund E., Kovacs K.M. and Lydersen C. 2006. Congener-specific accumulation and patterns of chlorinated and brominated contaminants in adult male walrus from Svalbard, Norway: indications for individual-specific prey selection. *Science of the Total Environment* 370: 70-79.
11. **Wolkers H.**, Hammill M.O., and van Bavel B. 2006. Tissue-specific accumulation and lactational transfer of PCBs, chlorinated pesticides, and brominated flame retardants in hooded seals (*Cystophora cristata*) from the Gulf of St. Lawrence - Applications for monitoring. *Environmental Pollution* 142: 476-486.
12. **Wolkers H.**, Lydersen C., Kovacs K.M., Burkow I.C., and van Bavel B. 2006. Accumulation, metabolism, and food chain transfer of chlorinated and brominated contaminants in subadult white whales (*Delphinapterus leucas*) and narwhals (*Monodon monoceros*) from Svalbard, Norway. *Archives of Environmental Toxicology and Chemistry* 50: 69-78.
13. Borgå K., **Wolkers H.**, Skaare J.U., Hop H., Muir D.C.G., and Gabrielsen G.W. 2005. Bioaccumulation of PCBs in arctic seabirds: influence of dietary exposure and congener biotransformation. *Environmental pollution* 134: 397-409.
14. **Wolkers J.**, Bavel van B., Derocher A.E., Wigg Ø., Kovacs K.M., Lydersen C., and Lindström G. 2004. Congener-specific accumulation and food chain transfer of polybrominated diphenyl ethers in two arctic food chains. *Environmental Science and Technology* 38: 1667-1674.
15. **Wolkers J.**, Lydersen C., and Kovacs K.M. 2004. Accumulation and lactational transfer of PCBs and pesticides in harbor seals (*Phoca vitulina*) from Svalbard, Norway. *Science of the Total Environment* 319: 137-146.
16. Berge J.A., Brevik E.M., Bjørge A., Følsvik N., Gabrielsen G.W., and **Wolkers J.** 2004. Organotins in marine mammals and seabirds from Norwegian territories. *Journal of Environmental Monitoring* 2: 108-112.
17. Derocher A., **Wolkers H.**, Colborn T., Schlabach M., Larsen T., and Wigg Ø. 2003. Contaminants in Svalbard polar bear samples archived since 1967 and possible population level effects. *Science of the Total Environment* 301: 163-174.
18. Carroll J., **Wolkers H.**, Andersen M., and Rissanen K. 2002. Bioaccumulation of radiocaesium in arctic seals. *Marine Pollution Bulletin* 44: 1366-1371.
19. Lydersen C., **Wolkers J.**, Severinsen T., Kleivane L., Nordøy E.S. and Skaare J.U. 2002. Blood is a poor substrate for monitoring pollutant burdens in phocid seals. *Science of the Total Environment* 292: 193-203.

20. **Wolkers J.**, I. Burkow, M.O. Hammill, C. Lydersen, and R. Witkamp 2002. Transfer of PCBs and chlorinated pesticides from mother to pup in relation to cytochrome P450 enzyme activity in harp seals (*Phoca groenlandica*) from the Gulf of St. Lawrence. *Environmental Toxicology and Chemistry* 21: 94-101
21. Fraser A.J., I.C. Burkow, **H. Wolkers**, and D. Mackay 2002. Modeling biomagnification and metabolism of contaminants in harp seals of the Barents Sea. *Environmental Toxicology and Chemistry* 21: 55-61
22. **Wolkers J.**, I. Burkow, C. Lydersen, and R. Witkamp 2000. Chlorinated pesticides and cytochrome P450 enzymes in harp seals (*Phoca groenlandica*) from the Barents Sea. *Environmental Toxicology and Chemistry* 19: 1632-1637.
23. Henriksen E., G. Gabrielsen, S. Trudeau, **J. Wolkers**, K. Sagerup, and J. Skaare. 2000. Organochlorines and possible biochemical effects in glaucous gulls (*Larus hyperboreus*) from Bear Island. 1. Cytochrome P450 enzyme activities and highly carboxylated porphyrins. *Archives of Environmental Contamination and Toxicology* 38: 234-243.
24. Henriksen, E., G. Gabrielsen, S. Trudeau, **J. Wolkers**, K. Sagerup, and J. Skaare 1999. Persistent organochlorines, cytochrome P450 enzyme activities and highly carboxylated porphyrins in glaucous gulls (*Larus hyperboreus*). *Toxicology Letters* 109, Suppl.1: 64.
25. Jørgensen E. and **J. Wolkers** 1999. The effect of temperature on the time-dependent P4501A response after oral exposure to benzo(a)pyrene in winter- and summer-acclimated Arctic char (*Salvelinus alpinus*). *Canadian Journal of Fisheries and Aquatic Sciences* 56: 1370-1375.
26. **Wolkers J.**, I. Burkow, M. Monshouwer, C. Lydersen, S. Dahle, and R. Witkamp 1999. Cytochrome P450-mediated enzyme activities and polychlorinated biphenyl accumulation in harp seal (*Phoca groenlandica*). *Marine Environmental Research* 48: 59-72.
27. **Wolkers J.**, I. Burkow, C. Lydersen, S. Dahle, M. Monshouwer, and R. Witkamp 1998. Congener specific PCB and toxaphene levels in Svalbard ringed seals (*Phoca hispida*) in relation to sex, age, condition and cytochrome P450 enzyme activity. *The Science of the Total Environment* 216: 1-11.
28. **Wolkers J.**, R. Witkamp, S. Nijmeijer, I. Burkow, E. de Groene, C. Lydersen, S. Dahle and M. Monshouwer 1998. Phase I and phase II enzyme activities in ringed seals (*Phoca hispida*); characterization of hepatic cytochrome P450 by activity patterns, inhibition studies, mRNA analyses and Western blotting. *Aquatic Toxicology* 44: 103-115.
29. **Wolkers J.**, E. Jørgensen, S. Nijmeijer, and R. Witkamp 1998. Dose and time dependency of cytochrome P450 induction in liver and kidney of B(a)P exposed arctic char (*Salvelinus alpinus*). *Marine Environmental Research* 46: 117-120.
30. **Wolkers J.**, E. Jørgensen, S. Nijmeijer, and R. Witkamp 1996. Time dependent induction of 2 distinct hepatic cytochrome P4501A catalytic activities at low temperatures in Arctic char (*Salvelinus alpinus*) after oral exposure to benzo(a)pyrene. *Aquatic Toxicology* 35: 127-138
31. **Wolkers J.**, T. Wensing, J. Schonewille, and A. van't Klooster 1994. Undernutrition in relation to changed tissue composition in red deer. *Canadian Journal of Zoology* 72: 1837-1840.
32. **Wolkers J.**, T. Wensing, and J. Schonewille 1994. The effect of undernutrition on haematological and serum biochemical variables in red deer (*Cervus elaphus*). *Canadian Journal of Zoology* 72: 1291-1296.
33. **Wolkers J.**, T. Wensing, J. Schonewille, and A. van't Klooster 1994. Undernutrition in relation to changed tissue composition on wild boar (*Sus scrofa*). *Comparative Biochemistry and Physiology* 108 A: 623-628.
34. **Wolkers J.**, T. Wensing, G. Groot Bruinderink, and J. Schonewille 1994. The effect of undernutrition on haematological and serum biochemical variables in wild boar (*Sus scrofa*). *Comparative Biochemistry and Physiology* 108 A: 431-437.
35. **Wolkers J.**, T. Wensing, and G. Groot Bruinderink 1994. Heavy metal contamination in organs of red deer (*Cervus elaphus*) and wild boar (*Sus scrofa*) and the effect on some trace elements. *The Science of the Total Environment* 144: 191-199.
36. **Wolkers J.**, T. Wensing, and G. Groot Bruinderink 1994. Sedation of wild boar (*Sus scrofa*) and red deer (*Cervus elaphus*) with medetomidine and the influence on some haematological and serum biochemical variables. *The Veterinary Quarterly* 16: 7-9.
37. **Wolkers J.**, T. Wensing, G. Groot Bruinderink, and J. Schonewille 1994. Lungworm and stomachworm infection in relation to body fat reserves and blood composition in wild boar (*Sus scrofa*). *The Veterinary Quarterly* 16: 193-195.
38. **Wolkers J.**, T. Wensing, G. Groot Bruinderink, and J. Schonewille 1993. Nutritional status of wild boar (*Sus scrofa*): body fat reserves in relation to haematology and blood chemistry. *Comparative Biochemistry and Physiology* 105 A: 539-542.

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