

Curriculum Vitae

Name Jon Christian Svendsen.
Home address Rua Conde Vizela 68 A, 1 TZ, Vitoria, 4050-639 Porto, Portugal.
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Date of birth January 6th, 1975.
Citizenship Danish.

Time	Education
Sep. 2008	PhD in biology, University of Copenhagen, Denmark. Project title: "Factors influencing the migratory behaviour and the migration success of anadromous brown trout and Atlantic salmon in freshwater".
Sep. 2003	MSc in biology, University of Copenhagen, Denmark. Project title: "The utility of an acoustic angle transmitter for quantification of the feeding behaviour of free-ranging common bream <i>Abramis brama</i> ".
Jan. 2001	BSc in biology, University of Copenhagen, Denmark.

Work Experience

2013 - 2015 Post doctoral position at CIIMAR, University of Porto, Portugal, full-time. Adviser: Dr. J.M. Wilson.

2011 - 2013 Post doctoral position at Fisheries and Oceans Canada, full-time. Adviser: Dr. E.C. Enders.
Carried out behavioural and physiological studies on fish in relation to preferred temperatures and hypoxia. Developed a habitat model for the threatened carmine shiner (*Notropis percobromus*).

2010 Post doctoral position at the University of Minnesota, USA, full-time. Advisers: Professors P.W. Sorensen, A. Mensinger and V. Voller.
Investigated sensory capacities of fish and developed a behavioural barrier to prevent migration of invasive fish species.

2008 - 2009 Post doctoral position at the Technical University of Denmark, Denmark, full-time. Advisers: Dr. K. Aarestrup and Professor J.F. Steffensen.
Studied aerobic and anaerobic metabolic rates in fish in relation to hypoxia and developed a fish telemetry system for 3D positioning in natural settings.

2005 - 2008 Ph.D. student at the University of Copenhagen, Denmark, full-time. Advisers: Professor H. Gislason and Dr. K. Aarestrup.

2003 - 2004 Research Assistant at the Danish Institute for Fisheries Research, Department of Inland Fisheries Research, full-time. Adviser: Dr. K. Aarestrup.

Selected presentations

Invited presentations

2015 *Society of Experimental Biology Annual Meeting* in Czech Republic. Oral presentation.

2013 *Oceanus Seminar*, University of Porto in Portugal. Oral presentation.

2012 *The International Congress on the Biology of Fish* in USA. Oral presentation.

- 2010 *St. Anthony Falls Laboratory Seminar*, University of Minnesota, in USA. Oral presentation. Presentation available at: <https://umconnect.umn.edu/p30497768/?launcher=false&fcsContent=true&pbMode=normal>
- 2010 *Leverhulme Trust International Network Meeting: Bridging the gap between fish behaviour and hydraulics* in Canada. Oral presentation.
- 2010 Fisheries and Oceans Canada, Freshwater Institute, in Canada. Oral presentation.
- 2010 University of Minnesota, Duluth, in USA. Oral presentation.
- 2008 *Leverhulme Trust International Network Meeting: Bridging the gap between fish behaviour and hydraulics* in UK. Oral presentation.
- 2005 *American Fisheries Society, 135th Annual Meeting* in USA. Oral presentation.

Other presentations and seminars

- 2015 *Society of Experimental Biology Annual Meeting* in Czech Republic. Oral presentation.
- 2014 *The International Congress on the Biology of Fish* in UK. Two oral presentations.
- 2013 University of Alabama, USA. Oral presentation.
- 2013 Stony Brook University, USA. Oral presentation.
- 2012 *The International Congress on the Biology of Fish* in USA. Oral presentation.
- 2010 Joint meeting of the Minnesota chapters of the *American Fisheries Society, Society for Conservation Biology, Society of American Foresters* and *The Wildlife Society* in USA. Oral presentation.
- 2010 *Society for Integrative and Comparative Biology Annual Meeting* in USA. Oral presentation.
- 2005 *Sixth Conference on Fish Telemetry held in Europe* in Portugal. Poster presentation.
- 2004 *Behaviour and Ecology of Freshwater Fish Conference* in Denmark. Oral presentation.
- 2003 *Fifth Conference on Fish Telemetry held in Europe* in Italy. Oral presentation.
- 2002 *British Ecological Society Annual Meeting* in UK. Oral presentation.

Awards, Fellowships and Research funding

	<i>Grant</i>	<i>Source and amount</i>
2015	Research Grant	Minister of Culture's Science Foundation, Denmark, in collaboration with Dr. L.F. Jensen; US\$ 18,000
2015	Research Grant	Augustinus Foundation, Denmark, in collaboration with Dr. L.F. Jensen; US\$ 15,000
2015	FCT Postdoctoral Fellowship	FCT, Portugal; US\$ 30,500
2014	Research Grant	The Wadden Sea National Park, Denmark, in collaboration with Dr. L.F. Jensen; US\$ 6,400
2014	Research Grant	Elisabeth and Knud Petersen's Foundation, Denmark; US\$ 16,500
2014	Research Grant	Fisheries and Maritime Museum, Denmark;

		US\$ 12,500
2014	Research Grant	COST Action FA1004, European Union; US\$ 3,300.
2014	Research Grant	15 th June Foundation, Denmark, in collaboration with Dr. L.F. Jensen; US\$ 51,000
2014	FCT Postdoctoral Fellowship	FCT, Portugal; US\$ 30,500
2013	FCT Postdoctoral Fellowship	FCT, Portugal; US\$ 14,500
2012	NSERC Visiting Fellowship	NSERC, Canada; US\$ 48,000
2011	NSERC Visiting Fellowship	NSERC, Canada; US\$ 48,000
2009	SLIP Research School Fellowship	University of Copenhagen and Danish Research Council, Denmark, in collaboration with Prof. J.F. Steffensen; US\$ 66,500.
2009	Research Grant	Natural Heritage Agency of Denmark, Denmark, in collaboration with Dr. L.F. Jensen; US\$ 63,000
2007	Idella Travel Award	Technical University of Denmark, Denmark; US\$ 1,800.
2005	Friday Harbor Laboratories Travel Award	University of Washington, USA; US\$ 500.

Peer-review

2003 – Reviewer for 18 journals and review organizations: *African Journal of Marine Science, Animal Behaviour, Animal Biology, Axios Review, Comparative Biochemistry and Physiology, Ecology of Freshwater Fish, Endangered Species Research, Environmental Biology of Fishes, Fisheries Management and Ecology, Freshwater Biology, Journal of Experimental Marine Biology and Ecology, Journal of Fish Biology, Marine & Freshwater Research, Methods in Ecology and Evolution, New Zealand Journal of Marine and Freshwater Research, PLOS One, River Research and Applications* and *Science of the Total Environment*.
Number of manuscripts reviewed: 32.

Teaching

2015 Published a paper providing guidelines for science teachers when teaching university students animal physiology in relation to the effects of aquatic hypoxia and climate change. The paper is listed as number 31) in the publication list below.

- 2009 Teaching Assistant for the 'Fish Swimming' class (postgraduate students) at University of Washington, USA. Full-time. Advisers: Dr. P. Domenici and Professor J.F. Steffensen.
- 2008 – 2009 Teaching assistant for the 'Fish Biology – Anatomy and Physiology' class at University of Copenhagen, Denmark. Part-time. Adviser: Professor J.F. Steffensen.
- 2007 Teaching Assistant for the 'Fish Swimming' class (postgraduate students) at University of Washington, USA. Full-time. Advisers: Dr. P. Domenici and Professor J.F. Steffensen.
- 2003 - Advised or co-advised 4 PhD students, 9 MSc students and 4 BSc students.

Organisational work

- 2015 - Member of the Society for Experimental Biology.
- 2015 - MC Substitute for Cost Action FA1304 'Swimming of fish and implications for migration and aquaculture (FITFISH)'. Publication 29) in the list below is a contribution to Cost Action FA1304.
- 2013 – 2015 Member of Cost Action FA1004 'Conservation Physiology of Marine Fishes'. I was meeting facilitator in 2014 and 2015. Publication 31) in the list below is a contribution to Cost Action FA1004.

Peer-reviewed publications

- 36) Peixoto, M.J., **Svendsen**, J.C., Malte, H., Pereira, L.F., Carvalho, P., Pereira, R., Gonçalves, J.F.M. & Ozório, R.O.A. (2015). Diets supplemented with seaweed affect metabolic rate, innate immune and antioxidant responses, but not individual growth rate in seabass (*Dicentrarchus labrax*). *Journal of Applied Phycology* (in press).
- 35) Piper, A.T., **Svendsen**, J.C., Wright, R.M. & Kemp, P.S. (2015). Movement patterns of seaward migrating European eel (*Anguilla anguilla*) at barriers: implications for conservation. *Ecology of Freshwater Fish* (in press).
- 34) Meghan, C., Watkinson, D., **Svendsen**, J.C., Enders, E. & Lindenschmidt, K.-E. (2015). Geospatial modelling of the Birch River: distribution of carmine shiner (*Notropis percobromus*) in geomorphic response units (GRU). *International Review of Hydrobiology* (in press).
- 33) Jensen, L.F., Thomsen, D.S., Madsen, S.S., Ejbye-Ernst, M., Poulsen S.B. & **Svendsen**, J.C. (2015). Ontogenetic development of salinity tolerance and osmoregulation in the endangered anadromous North Sea houting (*Coregonus oxyrinchus*): implications for conservation and habitat restoration. *Endangered Species Research* (in press).
- 32) Aarestrup, K., Baktoft, H., Thorstad, E.B., **Svendsen**, J.C., Höjesjö, J. & Koed, A. (2015). Survival and progression rates of anadromous brown trout kelts during downstream migration in freshwater and at sea. *Marine Ecology Progress Series* (in press).
- 31) Rosewarne, P.J., Wilson, J.M. & **Svendsen**, J.C. (2015). Measuring maximum and standard metabolic rates using intermittent flow respirometry: a student laboratory investigation of aerobic metabolic scope and environmental hypoxia in aquatic breathers. *Journal of Fish Biology* (in press).
- 30) Baktoft, H., Zajicek, P., Klefoth, T., **Svendsen**, J.C., Jacobsen, L., Pedersen, M.W., March, D., Skov, C., Nakayama, S. & Arlinghaus, R. (2015). Performance assessment of two whole-lake acoustic positional telemetry systems - is reality mining of free-ranging aquatic animals technologically possible? *PLoS One* **10**, e0126534.
- 29) **Svendsen**, J.C., Tirsgaard, B., Cordero, G.A. & Steffensen, J.F. (2015). Intraspecific variation in aerobic and

anaerobic locomotion: gillhead sea bream (*Sparus aurata*) and Trinidadian guppy (*Poecilia reticulata*) do not exhibit a trade-off between maximum sustained swimming speed and minimum cost of transport. *Frontiers in Physiology* **6**, 1-12.

- 28) Tirsgaard, B., **Svendsen**, J.C. & Steffensen, J.F. (2015). Effects of temperature on specific dynamic action in Atlantic cod *Gadus morhua*. *Fish Physiology and Biochemistry* **41**, 41–50.
- 27) Zielinski, D.P., Voller, V.R., **Svendsen**, J.C., Hondzo, M., Mensinger, A.F. & Sorensen, P. (2014). Laboratory experiments demonstrate that bubble curtains can effectively inhibit movement of common carp. *Ecological Engineering* **67**, 95-103.
- 26) **Svendsen**, J.C., Genz, J., Anderson, W.G, Stol, J.A., Watkinson, D.A. & Enders, E.C. (2014). Evidence of circadian rhythm, oxygen regulation capacity, metabolic repeatability and positive correlations between forced and spontaneous maximal metabolic rates in lake sturgeon *Acipenser fulvescens*. *PLOS One* **9**, e94693.
- 25) Poulsen, S.B., **Svendsen**, J.C., Aarestrup, K. & Malte, H. (2014). Calcium dependent behavioural responses to acute copper exposure in rainbow trout (*Oncorhynchus mykiss*). *Journal of Fish Biology* **84**, 1326–1339.
- 24) Boel, M., Aarestrup, K., Baktoft, H., Larsen, T., Madsen, S.S., Malte, H., Skov, C., **Svendsen**, J.C. & Koed, A. (2014). The physiological basis of the migration continuum in brown trout (*Salmo trutta*). *Physiological and Biochemical Zoology* **87**, 334-345.
- 23) Rosewarne, P., **Svendsen**, J.C., Mortimer, R. & Dunn, A. (2014). Muddied waters: suspended sediment impacts on gill structure and aerobic scope in an endangered native and an invasive freshwater crayfish. *Hydrobiologia* **722**, 61-74.
- 22) Baktoft, H., Aarestrup, K., Berg, S., Sørensen, M., Jacobsen, L., Koed, A., Pedersen, M., **Svendsen**, J.C. & Skov, C. (2013). Effects of angling and manual handling on pike behaviour investigated by high resolution positional telemetry. *Fisheries Management and Ecology* **20**, 518-525.
- 21) **Svendsen**, J.C., Banet, A.I., Steffensen, J.F., Christensen, R.H.B. & Aarestrup, K. (2013). Effects of intraspecific variation in reproductive traits, pectoral fin use and burst swimming on metabolic rates and swimming performance in the Trinidadian guppy (*Poecilia reticulata*). *Journal of Experimental Biology* **216**, 3564-3574.
- 20) Genz, J., Jyde, M.B., **Svendsen**, J.C., Steffensen, J.F. & Ramløv (2013). Excess post-hypoxic oxygen consumption is independent from lactate accumulation in two cyprinid fishes. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology* **165**, 54–60.
- 19) McKenzie, D.J., Estivales, G., **Svendsen**, J.C., Steffensen, J.F. & Agnès J-F (2013). Local adaptation to altitude underlies divergent thermal physiology in tropical killifishes of the genus *Aphyosemion*. *PLOS One* **8(1)**, e54345.
- 18) Poulsen, S.B., Jensen, L.F., Schulz, C., Deacon, M.C., Meyer, K.E., Jäger-Kleinicke, T., Schwarten, H. & **Svendsen**, J.C. (2012). Ontogenetic differentiation of swimming performance and behaviour in relation to habitat availability in the endangered North Sea houting (*Coregonus oxyrinchus*). *Aquatic Living Resources* **25**, 241-249.
- 17) Baktoft, H., Aarestrup, K., Berg, S., Boel, M., Jacobsen, L., Jepsen, N., Koed, A., **Svendsen**, J.C. & Skov, C. (2012). Seasonal and diel effects on the activity of northern pike studied by high resolution positional telemetry. *Ecology of Freshwater Fish* **21**, 386-394.
- 16) **Svendsen**, J.C., Steffensen, J.F., Aarestrup, K., Frisk, M., Etzerodt, A. & Jyde, M. (2012). Excess post hypoxic oxygen consumption in rainbow trout *Oncorhynchus mykiss*: recovery in normoxia and hypoxia. *Canadian Journal of Zoology* **90**, 1-11.
- 15) Poulsen, S.B., Jensen, L.F., Nielsen, K.S., Malte, H., Aarestrup, K. & **Svendsen**, J.C. (2011). Behaviour of rainbow

trout *Oncorhynchus mykiss* presented with a choice of normoxia and stepwise progressive hypoxia. *Journal of Fish Biology* **79**, 969-979.

- 14) **Svendsen**, J.C., Aarestrup, K., Malte, H., Thygesen, U.H., Baktoft, H., Koed, A., Deacon, M.G., Cubitt, K.F. & McKinley, R.S. (2011). Linking individual behaviour and migration success in *Salmo salar* smolts approaching a water abstraction site: implications for management. *Aquatic Living Resources* **24**, 201-209.
- 13) **Svendsen**, J.C., Tudorache, C., Jordan, A.D., Steffensen, J.F., Aarestrup, K. & Domenici, P. (2010). Partition of aerobic and anaerobic swimming costs related to gait transitions in a labriform swimmer. *Journal of Experimental Biology* **213**, 2177-2183.
- 12) Poulsen, S.B, **Svendsen**, J.C., Jensen, L.F., Schulz, C., Jäger-Kleinicke, T. & Schwarten, H. (2010). Effects of food deprivation on refuge use and dispersal in juvenile North Sea houting (*Coregonus oxyrinchus*) under experimental conditions. *Journal of Fish Biology* **77**, 1702–1708.
- 11) **Svendsen**, J.C., Aarestrup, K., Deacon, M.G. & Christensen, R.H.B (2010). Effects of a surface oriented travelling screen and water abstraction practices on downstream migrating salmonidae smolts in a lowland stream. *River Research and Applications* **26**, 353–361.
- 10) Aarestrup, K., Thorstad, E.B., **Svendsen**, J.C., Jepsen, N., Koed, A., Pedersen, M.I. & Økland, F. (2010). Survival and progression rates of large European silver eel *Anguilla anguilla* in late freshwater and early marine phases. *Aquatic Biology* **9**, 263-270.
- 9) **Svendsen**, J.C., Aarestrup, K., Dolby, J. Svendsen, T.C. & Christensen, R.H.B. (2009). The volitional travel speed varies with reproductive state in mature female brown trout *Salmo trutta*. *Journal of Fish Biology* **75**, 901-907.
- 8) Svendsen, T.C., Vorkamp, K., **Svendsen**, J.C., Frier, J.-O. & Aarestrup, K. (2009). Organochlorine fingerprinting to determine foraging areas of sea ranched salmon - a case study from Denmark. *North American Journal of Fisheries Management* **29**, 598–603.
- 7) Tudorache, C., Jordan, A.D., **Svendsen**, J.C., Domenici, P. & Steffensen, J.F. (2009). Pectoral fin beat frequency predicts oxygen consumption during spontaneous activity in a labriform swimming fish (*Embiotoca lateralis*). *Environmental Biology of Fishes* **84**, 121-127.
- 6) Aarestrup, K., Thorstad, E.B., Koed, A., Jepsen, N., **Svendsen**, J.C., Pedersen, M.I., Skov, C. & Økland, F. (2008). Survival and behaviour of European silver eels in late freshwater and early marine phase during spring migration. *Fisheries Management and Ecology* **15**, 435-440.
- 5) **Svendsen**, J.C., Eskesen, A.O., Aarestrup, K., Koed, A. & Jordan, A.D. (2007). Evidence for non-random spatial positioning of migrating smolts (*Salmonidae*) in a small lowland stream. *Freshwater Biology* **52**, 1147–1158
- 4) **Svendsen**, J.C., Aarestrup, K., Steffensen, J.F. & Herskin, J. (2006). A novel acoustic dissolved oxygen transmitter for fish telemetry. *Marine Technology Society Journal* **40**, 103-108.
- 3) **Svendsen**, J.C., Koed, A. & Lucas, M.C. (2005). The angle of attack of the body of common bream *Abramis brama* while swimming at different speeds in a flume tank. *Journal of Fish Biology* **66**, 572-577.
- 2) **Svendsen**, J.C., Koed, A. & Aarestrup, K. (2004). Factors influencing the spawning migration of female anadromous brown trout. *Journal of Fish Biology* **64**, 528-540.
- 1) **Svendsen**, J.C., Skov, J., Bildsøe, M. & Steffensen, J.F. (2003). Intra-school positional preference and reduced tail beat frequency in trailing positions in schooling roach under experimental conditions. *Journal of Fish Biology* **62**, 834-846.

Popular science publications and technical reports

- 5) Jensen, L.F., Poulsen, S.B. & **Svendsen**, J.C. (2013). Fish and chips - undersøgelser af snæblens (*Coregonus oxyrinchus*) tilpasninger til det lokale miljø. *Årbog for Fiskeri- og Søfartsmuseet, Saltvandsakvariet i Esbjerg* **2013**, 104-115 (in Danish).
- 4) Stol, J.A., **Svendsen**, J.C. and Enders, E.C. (2013). Determining the thermal preferences of Carmine Shiner (*Notropis percobromus*) and Lake Sturgeon (*Acipenser fulvescens*) using an automated shuttlebox. *Canadian Technical Report of Fisheries and Aquatic Sciences* **3038**, vi + 23 p.
- 3) Jensen, L.F., Poulsen, S.B. & **Svendsen**, J.C. (2012). Snæblen – den lange kamp for overlevelse. *Årbog for Fiskeri- og Søfartsmuseet, Saltvandsakvariet i Esbjerg* **2012**, 121-133 (in Danish).
- 2) Poulsen, S.B, Jensen, L.F., **Svendsen**, J.C. & Deacon, M. (2010). Et studium af svømmeevner og adfærd hos yngel af nordsøsnæbel (*Coregonus oxyrinchus* L.). *Flora og Fauna* **116**, 73-81 (in Danish).
- 1) **Svendsen**, J.C. & Sivebæk, F. (2002). Ørredyngel dræber ørredyngel. *Sportsfiskeren* **77**, 68-69 (in Danish).