

Roy A.S. Hourston, M.Sc., A.C.M.

Education

M.Sc. 1992: University of British Columbia (Atmospheric Science).

B.Sc. 1986: University of Victoria (Geography, First Class).

Employment

2001 – 2011, Consultant Oceanographer/Meteorologist, Victoria, B.C.

1996 – 2001, Consultant Meteorologist, WeatherWorks Consulting, Victoria, B.C.

1995 – 1996, Statistical Analyst: Meteorological Applications, University of B.C.

1994 – 1995, Research Contractor, Atmospheric Environment Service, Victoria, B.C.

1992 – 1995, Statistical Analyst: Climate Applications, University of B.C.

Experience

I have extensive experience in the analysis and modelling of near-surface atmospheric and oceanic properties on hourly to decadal time-scales. This includes climate variability and change as manifested in near-surface currents, winds, waves and water levels, as well as temperatures, salinities, and precipitation. Analysis methodologies have been based on statistics and physics, and have included spectral and principal components analyses. Projects undertaken have often been multidisciplinary, involving linking ocean/atmospheric variability to life cycles of various fish, birds, or plankton.

Professional Societies

Canadian Meteorological and Oceanographic Society (CMOS)

American Meteorological Society (AMS)

American Geophysical Union (AGU)

Refereed Publications

Thomson, R.E. and Hourston, R.A.S. (2011) A matter of timing: the role of ocean conditions in the initiation of spawning migration by late-run Fraser River sockeye salmon (*Oncorhynchus nerka*). *Fish. Oceanogr.* 20(1):47-65. doi:10.1111/j.1365-2419.2010.00565.x.

Noel, M., Dangerfield, N., Hourston, R.A.S., Belzer, W., Shaw, P., Yunker, M.B. and Ross, P.S. (2009) Do trans-Pacific air masses deliver PBDEs to coastal British Columbia, Canada?. *Environmental Pollution*. 157:3404-3412. ISSN 0269-7491. DOI:10.1016/j.envpol.2009.06.025.

Cooke, S.J., Hinch, S.G., Farrell, A.P., Patterson, D.A., Miller-Saunders, K., Welch, D.W., Donaldson, M.R., Hanson, K.C., Crossin, G.T., Mathes, M.T., Lotto, A.G., Hruska, K.A., Olsson, I.C., Wagner, G.N., Thomson, R., Hourston, R., English, K.K., Larsson, S., Shrimpton, J.M., and Van der Kraak, G. (2008) Developing a mechanistic understanding of fish migrations by linking telemetry with physiology, behavior, genomics and experimental biology: an Interdisciplinary case study on adult Fraser River Sockeye Salmon. *Fisheries* 33(7), 321-338.

Cai, X.-M., R.A.S. Hourston, and D.G. Steyn (2000) A Numerical Study of Meteorological Conditions During PACIFIC '93, *Atmosphere-Ocean*, 38(3): 457-479.

Hinch, S.G., M.C. Healey, R.E. Diewert, K.A. Thomson, R. Hourston, M.A. Henderson, and F. Juanes (1995) Potential effects of climate change on marine growth and survival of Fraser River sockeye salmon, *Canadian Journal of Fisheries and Aquatic Sciences*, 52: 2651-2659.

Technical Reports and Conference Proceedings

- Thomson, R., S. Tinis, and R. Hourston (2010) *OSCOURS for the 21st Century: Northeast Pacific Salmon Tracking and Research (NEPSTAR) Project Year 1 Summary Report*. Pacific Salmon Commission. 33pp.
- Hourston, R.A.S. (2010) *Winds Near Sequim, Washington: Prevailing Direction in April and Winter Storm Winds*. Report prepared for Island Timberlands, Nanaimo, BC, Canada. 10 pp.
- Department of Fisheries and Oceans (2010) *State of the Pacific Ocean 2009*. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2010/034. (contributor)
- Hourston, R., and R. Thomson (2009) Wind-driven upwelling along the west coast, published on pages 46-49 in *State of physical, biological, and selected fishery resources of Pacific Canadian marine ecosystems*. DFO Can. Sci. Advis. Sec. Res. Doc. 2009/022. vi + 121 p., edited by W.R. Crawford and J.R. Irvine http://www.dfo-mpo.gc.ca/CSAS/Csas/Publications/ResDocs-DocRech/2009/2009_022_e.htm.
- Hourston, R.A.S. (2008) *Winds Near Valdes Island, British Columbia: April Climatologies and Annual Maxima*. Report prepared for Island Timberlands, Nanaimo, BC, Canada. 17 pp.
- Hourston, R.A.S. (2008) *2004 Saturna and Ucluelet Atmospheric Back-Trajectories: A Two-Season Analysis*. Report prepared for Peter Ross, Institute of Ocean Sciences, Sidney, BC, Canada. 16 pp.
- Department of Fisheries and Oceans (2008) *State of the Pacific Ocean 2007*. DFO Canadian Science Advisory Report 2008/028. (contributor)
- Hourston, R.A.S. (2007) *2004 Saturna and Ucluelet Atmospheric Back-Trajectory Analyses*. Report prepared for Peter Ross, Institute of Ocean Sciences, Sidney, BC, Canada. 30 pp.
- Thomson, R.E., and Hourston, R.A.S. (2007) *Investigations to determine the cause of early migration behavior and magnitude of in-river survival and losses above Mission for adult Late-run Fraser River sockeye* (DFO Oceanography). Report to Southern Boundary Restoration and Enhancement Fund. Pacific Salmon Commission, Vancouver, BC.
- Department of Fisheries and Oceans (2007) *State of the Pacific Ocean 2006*. DFO Ocean Status Report 2007/001. (contributor)
- Hourston, R.A.S. (2006) *Surface Waves and Sub-Surface Currents off the West Coast of Vancouver Island: Extremes and Climatologies*. Report prepared for NEPTUNE Canada, University of Victoria, Victoria, BC, Canada. 24 pp.
- Department of Fisheries and Oceans, (2006). *2005 Pacific Region State of the Ocean*. DFO Science Ocean Status Report 2006-01 (2006). (contributor)
- Thomson, R.E., Hourston, R.A.S., and Hinch, S.G. 2005. *The brackish layer model: A biophysical mechanism for early entry of Late-run Fraser River salmon*. Report to Southern Boundary Restoration and Enhancement Fund. Pacific Salmon Commission, Vancouver, BC.
- Department of Fisheries and Oceans, (2005). *2004 Pacific Region State of the Ocean*. DFO Science Ocean Status Report 2005-01 (2005). (contributor)
- Department of Fisheries and Oceans, (2004). *2003 Pacific Region State of the Ocean*. DFO Science Ocean Status Report 2004-01 (2004). (contributor)
- Department of Fisheries and Oceans, (2003). *2002 Pacific Region State of the Ocean*. DFO Science Ocean Status Report 2003-01 (2003). (contributor)
- Department of Fisheries and Oceans, (2002). *2001 Pacific Region State of the Ocean*. DFO Science Ocean Status Report 2002-01 (2002). (contributor)
- Department of Fisheries and Oceans, (2001). *2000 Pacific Region State of the Ocean*. DFO Science Ocean Status Report 2001-01 (2001). (contributor)
- Department of Fisheries and Oceans, (2000). *1999 Pacific Region State of the Ocean*. DFO Science Ocean Status Report 2000-01 (2000). (contributor)
- Hourston, R.A.S. (1998) *A 1961-90 Climatological Data Set for Southern British Columbia*. Report prepared for the Aquatic and Atmospheric Sciences Division, Environment Canada, Pacific and Yukon Region. WeatherWorks Consulting, Victoria, Canada. 68 pp.
- Cheong, A.L., and R.A.S. Hourston (1998) *Report on the hydrological assessment of basin types*. Report prepared for B.C. Ministry of Environment, Lands and Parks, Fisheries Inventory

- Section, Resources Inventory Branch. WeatherWorks Consulting, Victoria, Canada. 24 pp.
- Hourston, R.A.S (1997) *Seasonal climate predictions based on a neural network model, Version 2*. Report prepared for the Canadian Institute for Climate Studies. WeatherWorks Consulting, Victoria, Canada. 130 pp.
- Hourston, R.A.S (1997) *Seasonal climate prediction neural network model software manual, Version 2.0*. Report prepared for the Canadian Institute for Climate Studies. WeatherWorks Consulting, Victoria, Canada. 147 pp.
- Hourston, R.A.S (1997) *Report on the development of prediction of Western Canada heating degree day anomalies*. Report prepared for the Canadian Institute for Climate Studies. WeatherWorks Consulting, Victoria, Canada. 76 pp.
- Hourston, R.A.S (1997) *Report on the verification of the neural network climate prediction model performance*. Report prepared for the Canadian Institute for Climate Studies. WeatherWorks Consulting, Victoria, Canada. 68 pp.
- Hourston, R.A.S (1997) *Report on the development of prediction of West Vancouver Island sea-surface temperatures*. Report prepared for the Canadian Institute for Climate Studies. WeatherWorks Consulting, Victoria, Canada. 36 pp.
- Fyfe, J., and R. Hourston (1995) *A Comprehensive Study of Simulated and Observed Low-Frequency Upper Troposphere Variability*. Presentation at the American Geophysical Union Annual Fall Meeting, San Francisco.
- McBean, G.A., W. Hsieh, R. Hourston, and A. Cheong (1994) *Circulation patterns for stream flow and temperature predictions in Canadian surface climate*. Report prepared for the Canadian Electrical Association. Department of Oceanography, University of British Columbia, Vancouver, Canada. 231 pp.
- McBean, G.A., G. Thomas, and R. Hourston (1993) *Study of changes in atmospheric circulation patterns and their effects on B.C. precipitation and runoff*. Report prepared for the Atmospheric Environment Service of Environment Canada, Hydrometeorological Processes Division, and B.C. Hydro. Department of Oceanography, University of British Columbia, Vancouver, Canada. 295 pp.