

# Joseph Thorley

SENIOR COMPUTATIONAL BIOLOGIST

Poisson Consulting Ltd

☎ +1 250 551 2194 | ✉ [joe@poissonconsulting.ca](mailto:joe@poissonconsulting.ca) | 🏠 [poissonconsulting.ca/joe](https://poissonconsulting.ca/joe) | 📷 [joethorley](#) | 📄 [joe-thorley-15514033](#)

## Background

---

Dr Joseph Thorley RPBio is a Senior Computational Biologist with Poisson Consulting Ltd who specializes in Bayesian analysis of fish and wildlife populations. As well as teaching courses on Understanding Statistics and Decision Making for Natural Resource Managers he maintains over 14 R packages on CRAN.

## Education

---

2000 PhD in Theoretical Phylogenetics

*Bristol University*

1994 BA in Biological Sciences

*Oxford University*

## Career

---

2017 Senior Computational Biologist

*Poisson Consulting*

2007 Fish Population Biologist

*Poisson Consulting*

2005 Fisheries Biologist

*Independent*

2002 Fisheries Biologist

*Scottish Exec.*

## Recent Projects

---

### Harmer and Grave Creek Westslope Cutthroat Trout (2020 - ongoing)

Study design, data analysis and contribution to Evaluation of Cause to estimate influence of environmental variables on population dynamics.

### Bathurst and Blue Nose East Barren-Ground Caribou Herds (2018 - ongoing)

Analysis of fecundity, breeding cow abundance, cow collar, fall bull cow, fall calf cow and spring calf cow ratio data complete with standard errors using an integrated stage-based state-space population model to estimate survival and population growth rate.

### Lower Columbia River Fish Indexing (2008 - ongoing)

Study design and data analysis for CLBMON-45 to estimate abundance, growth, survival and body condition of Whitefish, Rainbow Trout, and Walleye.

### Lardeau and Lower Duncan River Juvenile Rainbow Trout Stock Recruitment (2008 - ongoing)

Study design, field work and data analysis for project to estimate Gerrard Rainbow Trout stock-recruitment.

### Lower Columbia River Rainbow Trout Spawning (2009 - ongoing)

Study design, data analysis and report writing for CLBMON-46 to estimate the influence of dam operations on Rainbow Trout trout spawning, abundance, egg dewatering and survival.

### Quesnel Lake Telemetry and Mark Recapture (2014 - ongoing)

Study design and data analysis for project to estimate natural and fishing mortality for large Bull Trout, Lake Trout and Rainbow Trout.

## Key Publications

---

1. Thorley, J. L., & Branton, M. (2023). *Subject Matter Expert Report: Energetic Status at the Onset of Winter Based on Fork Length and Wet Weight. Evaluation of Cause – Reduced Recruitment in the Harmer Creek Westslope Cutthroat Trout Population.* Teck Coal Ltd. <https://www.teck.com/media/Energetic-Status-Harmer-Creek-Evaluation-of-Cause-SME-Report.pdf>
2. Warnock, W. G., Thorley, J. L., Arndt, S. K., Weir, T. J., Neufeld, M. D., Burrows, J. A., & Andrusak, G. F. (2021). Kootenay Lake kokanee (*Oncorhynchus nerka*) collapse into a predator pit. *Canadian Journal of Fisheries and Aquatic Sciences*, *cjfas-2020-0410*. <https://doi.org/10.1139/cjfas-2020-0410>
3. Fox, D. R., Dam, R. A., Fisher, R., Batley, G. E., Tillmanns, A. R., Thorley, J., Schwarz, C. J., Spry, D. J., & McTavish, K. (2020). Recent developments in SSD Modeling. *Environmental Toxicology and Chemistry*, etc.4925. <https://doi.org/10.1002/etc.4925>
4. Thorley, J., & Schwarz, C. (2018). ssdtools: An R package to fit Species Sensitivity Distributions. *Journal of Open Source Software*, *3*(31), 1082. <https://doi.org/10.21105/joss.01082>
5. Lee, L. C., Thorley, J., Watson, J., Reid, M., & Salomon, A. K. (2018). Diverse knowledge systems reveal social-ecological dynamics that inform species conservation status. *Conservation Letters*, *12*(2), e12613. <https://doi.org/10.1111/conl.12613>
6. Ramey, R. R., Thorley, J. L., & Ivey, A. S. (2018). Local and population-level responses of Greater sage-grouse to oil and gas development and climatic variation in Wyoming. *PeerJ*, *6*, e5417. <https://doi.org/10.7717/peerj.5417>
7. Thorley, J. L., & Andrusak, G. F. (2017). The fishing and natural mortality of large, piscivorous Bull Trout and Rainbow Trout in Kootenay Lake, British Columbia (2008–2013). *PeerJ*, *5*, e2874. <https://doi.org/10.7717/peerj.2874>
8. Thorne, A., MacDonald, A. I., & Thorley, J. L. (2016). The abundance of large, piscivorous Ferox Trout (*Salmo trutta*) in Loch Rannoch, Scotland. *PeerJ*, *4*, e2646. <https://doi.org/10.7717/peerj.2646>
9. Irvine, R. L., Thorley, J. L., Westcott, R., Schmidt, D., & DeRosa, D. (2015). Why Do Fish Strand? An Analysis of Ten Year of Flow Reduction Data from the Columbia and Kootenay Rivers, Canada. *River Research and Applications*, *31*(10), 1242–1250. <https://doi.org/10.1002/rra.2823>
10. Youngson, A. F., Piertney, S. B., Thorley, J. L., Malcolm, I. A., & Soulsby, C. (2011). Spatial association of nest construction by brown trout *Salmo trutta*. *Journal of Fish Biology*, *78*(3), 713–725. <https://doi.org/10.1111/j.1095-8649.2010.02883.x>
11. Thorley, J. L., Youngson, A. F., & Laughton, R. (2007). Seasonal variation in rod recapture rates indicates differential exploitation of Atlantic salmon, *Salmo salar*, stock components. *Fisheries Management and Ecology*, *14*(3), 191–198. <https://doi.org/10.1111/j.1365-2400.2007.00540.x>
12. Thorley, J. L., Eatherley, D., Stephen, A., Simpson, I., Maclean, J., & Youngson, A. (2005). Congruence between automatic fish counter data and rod catches of Atlantic salmon (*Salmo salar*) in Scottish rivers. *ICES Journal of Marine Science*, *62*(4), 809–817. <https://doi.org/10.1016/j.icesjms.2005.01.016>
13. Wilkinson, M., Cotton, J., Creevey, C., Eulenstein, O., Harris, S., Lapointe, F.-J., Levasseur, C., Mcinerney, J., Pisani, D., & Thorley, J. (2005). The Shape of Supertrees to Come: Tree Shape Related Properties of Fourteen Supertree Methods. *Systematic Biology*, *54*(3), 419–431. <https://doi.org/10.1080/10635150590949832>
14. Youngson, A. F., Malcolm, I. A., Thorley, J. L., Bacon, P. J., & Soulsby, C. (2004). Long-residence groundwater effects on incubating salmonid eggs: Low hyporheic oxygen impairs embryo development. *Canadian Journal of Fisheries and Aquatic Sciences*, *61*(12), 2278–2287. <https://doi.org/10.1139/f04-217>
15. Stefanni, S., & Thorley, J. L. (2003). Mitochondrial DNA phylogeography reveals the existence of an Evolutionarily Significant Unit of the sand goby *Pomatoschistus minutus* in the Adriatic (Eastern Mediterranean). *Molecular Phylogenetics and Evolution*, *28*(3), 601–609. [https://doi.org/10.1016/S1055-7903\(03\)00054-X](https://doi.org/10.1016/S1055-7903(03)00054-X)
16. Thorley, J. L., & Page, R. D. M. (2000). RadCon: Phylogenetic tree comparison and consensus. *Bioinformatics*, *16*(5), 486–487. <https://doi.org/10.1093/bioinformatics/16.5.486>