



IAN COURTER, M.S

Senior Fisheries Scientist

Ian Courter is the cofounder of Mount Hood Environmental (MHE), an Oregon-based science consulting company with additional staff in Washington, Idaho, and Minnesota. MHE specializes in fisheries research, water quality monitoring, and aquatic toxicology. Prior to establishing MHE, Ian provided project leadership, management, design, analysis, and data collection for Cramer Fish Sciences in Gresham, Oregon. In addition to his role as a senior scientist, Ian served as the Program Lead for Cramer Fish Science's Oregon operations. He has a Master's degree in Fisheries Science with a minor in Natural Resource Policy and Law from Oregon State University, a bachelor's degree in Environmental Biology from Pacific University, and a Project Management certification from Portland State University, among other certifications.

Ian has served as principal investigator on a variety of salmonid research projects in the Cowlitz, Klamath, Willamette, Yakima, Wenatchee, Methow, Deschutes, Owyhee, Snake, Upper Columbia, and Sacramento/San Joaquin River Basins. Of particular note, Ian led population dynamics and stream habitat modeling projects in the Klamath, Yakima, and Deschutes River basins. The primary aim of these investigations was to quantify the effects of flow, temperature, and other habitat attributes on salmon and steelhead populations. For example, Ian led a team of scientists to quantify the effects of Bureau of Reclamation project operations on abundance of resident rainbow trout and anadromous steelhead in the Yakima River basin, Washington. Ian implemented a similar modeling approach to support water management decisions in the Upper Deschutes Basin, Oregon. Subsequent to these analyses, Ian led a team of researchers to develop a population viability model for Yakima Basin steelhead. This work was highlighted in the National Marine Fisheries Service life-cycle modeling report for the Columbia Basin, which documents available modeling approaches for assessing effects of management actions on ESA-listed anadromous salmonid populations.

Ian is an expert in the study of stream habitat carrying capacity. He has written numerous reports and publications and frequently gives technical presentations at regional science meetings, including Washington, Idaho, and Oregon Chapters of the American Fisheries Society, as well as the biennial Pacific Coast Steelhead Management Meeting convened by the Pacific States Marine Fisheries Commission. He is regularly invited to be a guest speaker at technical symposia and he provides technical review of research reports on behalf of clients, as well as peer-review for scientific publications. In addition to his modeling experience, Ian has designed and implemented a variety of customized field and laboratory data collection projects to address questions about water management, hydropower, angling, and forestry effects on anadromous fish. Specific examples include spring Chinook smolt survival studies in the Yakima River, Washington; adult lamprey migration monitoring in the Willamette River, Oregon and Snake

River, Washington; instream flow studies in the Wenatchee and Methow Basins, Washington; redband trout monitoring and habitat capacity estimation in the Crooked River, Oregon; cutthroat trout surveys in the Umpqua Basin, Oregon; salmonid habitat surveys in the Yakima, Lewis, Sandy, Deschutes, and Owyhee River basins; steelhead and Coho entrainment monitoring in the Tualatin River, Oregon and bull trout entrainment monitoring in the Tieton River, Washington; salmonid predation monitoring in the Yakima River; salmon and steelhead angling studies in the Cowlitz River, Washington; Forest fire and tree stand density effects on stream habitat in Omak, Washington; and Coho Salmon habitat surveys in the Tillamook State Forest.

In addition to his research interests, Ian regularly serves as an expert advisor and analyst for water management agencies and resource user groups engaged in regulatory assessments, such as ESA consultations and Habitat Conservation Plans (HCP). Past experiences include Klamath Basin Coho Salmon and Yakima Basin Steelhead Trout ESA Section 7 consultations. MHE currently provides technical support for the Deschutes Basin HCP (project ongoing). Ian has also been retained as an expert witness and currently serves as a salmon and steelhead expert in three ongoing legal cases.

Education and Training

M.S., Fisheries Science, Minor in Natural Resource Policy and Law. Oregon State University, Corvallis, Oregon. 2005.

B.A., Environmental Biology. Pacific University, Forest Grove, Oregon. 2002

Project Management Certification. Portland State University, Portland, Oregon. 2008.

Oregon Boater Education, 2003

SSI Diver, 2007

Principals of Electrofishing Training, 2016

Private Pilot, 2020

Professional Experience

Senior Fisheries Scientist, Co-Owner. Mount Hood Environmental, Boring, Oregon. March 2014-Present.

Oregon Program Technical Lead. Cramer Fish Sciences, Portland, Oregon. April 2013-February 2014.

Senior Scientist. Cramer Fish Sciences, Portland, Oregon. 2010-2014.

Fisheries Biologist. Cramer Fish Sciences, Portland, Oregon. 2006-2010.

Marine Policy Intern. Oregon Department of Fish and Wildlife, Newport, Oregon. July 2005-December 2005.

National Science Foundation Fellow. Oregon State University, Corvallis, Oregon. July 2004-June 2005.

Select Publications and Reports

- Courter, I.I.**, Buehrens, T., Roes, M., Blackman, T.E., Briscoe, B. and Gibbs, S., 2023. Influence of angling methods and terminal tackle on survival of salmon and steelhead caught and released in the Cowlitz River, Washington. *Fisheries Research*, 268, p.106848.
- Courter, I.I.**, Chance, T., Gerstenberger, R., Roes, M., Gibbs, S. and Spidle, A., 2023. Response to Comment on Courter et al.(2022). *Canadian Journal of Fisheries and Aquatic Sciences*, 80(2), pp.422-423.
- Courter, I.**, Chance, T., Gerstenberger, R., Roes, M., Gibbs, S. and Spidle, A. 2022. Hatchery propagation did not reduce natural steelhead productivity relative to habitat conditions and predation in a mid-Columbia River subbasin. *Canadian Journal of Fisheries and Aquatic Sciences*, 79(11), pp.1879-1895.
- Mount Hood Environmental. 2020. Oregon Coastal Coho Salmon Data Compilation. Technical Memorandum prepared for the North Coast Salmon/Steelhead Enhancement Fund. 16 pp.
- Mount Hood Environmental. 2020. Assessment of Native Migratory Fish Habitat in the Upper Crooked River Subbasin. Report prepared for Ochoco Irrigation District, City of Prineville, and Crook County. 39 pp.
- Buehrens, T. and **Courter, I.** 2020. Salmon/Steelhead Hooking Mortality Model Development and Cowlitz River Hooking Mortality Study – Final Progress Report. Report prepared Washington Department of Fish and Wildlife. 14 pp.
- Courter I.I.**, GJ Wyatt, R.W. Perry, J.M. Plumb, F.M. Carpenter, N.K. Ackerman, R.B. Lessard, and PF Galbreath. 2019. A natural-origin steelhead population's response to exclusion of hatchery fish. *Transactions of the American Fisheries Society*. DOI: 10.1002/tafs.10140.
- Carpenter, F., Blackman, T. **Courter, I.** 2019. Springhill Pumping Plant Fish Entrainment Monitoring, Tualatin River, Oregon. Final Technical Report prepared for Joint Water Commission and Barney Reservoir Joint Ownership Commission. 40 pp.
- Roes, M., Blackman, T., **Courter, I.** 2019. Life cycle model development and evaluation of BOR's Proposed Action on steelhead production and viability in the Yakima Basin. Technical memorandum. Mount Hood Environmental, Boring, OR. 44 pp.
- Roes, M. and **I. Courter**. 2019 analysis of flow effects on *C. shasta* spore concentrations in the Klamath River. Technical Memorandum prepared for Klamath Water Users Association. Mount Hood Environmental, Boring, OR. 16 pp.
- Mount Hood Environmental. 2019. Elk River Hatchery Fish Effects Analysis. Technical Memorandum prepared for North Coast Salmon/Steelhead Enhancement Fund. 12 pp.
- Courter, I.** and F. Carpenter. 2018. Predicted Impacts of Bowman Dam Fish Passage and Remediation of Gas Bubble Disease on Redband Trout Production in the Crooked River Basin. Technical report prepared for Ochoco Irrigation District and the City of Prineville. 23

pp.

- Courter, I.**, K. Ceder, C. Fisher, and S. Schaller. 2017. Impacts of Stream Flow on Salmonid Production Potential in Stapaloop and Swimptkin Creeks, Washington. 2015 Annual Report prepared for the Colville Confederated Tribes, Omak, Washington, 27pp.
- Clemens, B.J., Wyss, L., McCoun, R., **Courter, I.**, Schwabe, L., Peery, C., Schreck, C.B., Spice, E.K. and Docker, M.F., 2017. Temporal genetic population structure and interannual variation in migration behavior of Pacific Lamprey *Entosphenus tridentatus*. *Hydrobiologia*, 794, pp.223-240.
- Courter I.I.**, T.M. Garrison, T.J. Kock, R.W. Perry, D.B. Child, J.D. Hubble. (2016) Benefits of prescribed flows for salmon smolt survival enhancement vary longitudinally in a highly managed river system. *River Research and Applications*. DOI: 10.1002/rra.3066
- Perry R.W., T.J. Kock, **I.I. Courter**, T.M. Garrison, J.D. Hubble, D.B. Child. (2016) Dam operations affect route-specific passage and survival of juvenile Chinook salmon at a mainstem diversion dam. *River Research and Applications*. DOI: 10.1002/rra.3059
- Clemens B.J., L. Wyss, R. McCoun, **I. Courter**, L. Schwabe, C. Peery, C.B. Schreck, E.K. Spice, M.F. Docker. (2017) Annual differences in genetic population structure and migration behavior of Pacific lamprey *Entosphenus tridentatus*. *Hydrobiologia* 294: 223-240.
- Courter L.A., Garrison T., **Courter I.I.** (2016) Latent toxicity of Endothall to anadromous salmonids during seawater challenge. *Bulletin of Environmental and Contaminant Toxicology* 96(5): 573-579.
- Stevens, P., **I. Courter**, C. Peery, and C. Caudill. 2016. Evaluation of Adult Pacific Lamprey Passage at Lower Snake River Dams. 2015 Annual Report prepared for the U.S. Army Corps of Engineers. Contract: W912EF-14-P-5061. Submitted April 2016, 66pp.
- Courter, I.**, T. Garrison, T. Kock, and R. Perry. 2015. Evaluation of Stream Flow Effects on Smolt Survival in the Yakima River Basin, Washington. Final Report Prepared for the Yakima Basin Joint Board and U.S. Bureau of Reclamation, 66pp.
- Courter, I.**, K. Ceder, C. Fisher, and S. Schaller. 2015. Impacts of Stream Flow on Salmonid Production Potential in Stapaloop and Swimptkin Creeks, Washington. 2014 Annual Report prepared for the Colville Confederated Tribes, Omak, Washington, 23pp.
- Courter, I.** and J. Caldwell. 2015. Instream Flow Assessment for Mid-Columbia Coho Reintroduction Project, Early Winters Creek Acclimation Site. Report submitted to Seasprings Co., March 2015, 18pp.
- Stevens, P., **I. Courter**, C. Peery, and C. Caudill. 2015. Evaluation of Adult Pacific Lamprey Passage at Lower Snake River Dams. 2014 Annual Report prepared for the U.S. Army Corps of Engineers. Contract: W912EF-14-P-5061. Submitted April 2015, 44pp.
- Courter, I.** and D. Child. 2014. Life-history diversity increases resilience of rainbow trout populations in the Columbia Basin. Pages 35-42 in R. F. Carline and C. LoSapio, editors. Wild Trout XI: Looking Back and Moving Forward. Wild Trout Symposium, West Yellowstone, Montana.

- Courter I.**, K. Ceder, M. Vaughn, R. Campbell, F. Forrester, and G. Engelgau. 2014. Evaluation of steelhead trout and Chinook salmon summer rearing habitat, spawning habitat, and fish passage in the upper Deschutes Basin. Report prepared for the Deschutes Basin Board of Control and City of Prineville, Oregon, 63pp.
- Courter I.**, F. Forrester, K. Ceder, and P. Gaskill. 2014. East Fork Owyhee River Salmon and Steelhead Recovery Project. Report prepared for The Shoshone-Paiute Tribes of the Duck Valley Indian Reservation, Owyhee, Nevada. 106pp.
- Courter, I.**, D. Child, J. Hobbs, T. Garrison, J. Glessner, and S. Duery. 2013. Resident rainbow trout produce anadromous offspring in a large interior watershed. *Canadian Journal of Fisheries and Aquatic Sciences*, Vol. 70, Num. 5, Page(s): 701-710
- Zabel, R., T. Cooney, C. Jordan, R. Charmichael, ... **I. Courter**, and 30 others. 2013. Life-cycle models for salmonid populations in the interior Columbia Basin. National Marine Fisheries Service Technical Report. 438 pp.
- Courter, I.**, T. Garrison, and F. Carpenter. 2013. Swift Reservoir floating surface collector juvenile salmon collection efficiency pilot study. Report prepared for Pacific Power. 43 pp.
- Courter, I.**, J. Vaughan, and S. Duery. 2012. Crooked River Redband Trout Study. Report Prepared for Ochoco Irrigation District, Prineville, Oregon, Page(s): 21 pp.
- Courter, I.**, L. Courter, T. Garrison, D. Cramer, S. Duery, D. Child, T. Hanna, and E. Buckner. 2012. Effects of the Aquatic Herbicide Cascade on Survival of Salmon and Steelhead Smolts During Seawater Transition. Report prepared for the Washington State Water Resources Association.
- Courter, I.**, S. Duery, J. Vaughan, C. Peery, M. Morasch, R. McCoun, B. Clemens and C. Schreck. 2012. Migration Behavior and Distribution of Adult Pacific Lamprey in the Willamette Basin. Report prepared for The Columbia River Inter-Tribal Fish Commission.
- Courter, I.**, S. Duery, and J. Vaughan. 2011. Steelhead Radio Telemetry, Fish Assemblage, and Salmonid Fry Monitoring at Spring Hill Pumping Plant, Tualatin River, Oregon. Report prepared for the U.S. Bureau of Reclamation, 12pp.
- Courter, I.** and J. Vaughan. 2011. Hydropower Operations Reduce Bull Trout Entrainment Mortality at Tieton Dam. Series: Hydro Review, Vol. 30, Num. 5, Page(s): 100-107
- Courter, I.** 2011. Crooked River steelhead life-history response model conceptual basis, model construct, and preliminary results. Technical Memorandum prepared for the Deschutes River Conservancy, 18pp.
- Courter, I.**, B. Lister, S. Cramer, J. Vaughan, S. Duery and D. Child. 2010. Evaluation of effects of resident rainbow trout and hatchery strays on steelhead production within the Middle Columbia River *Oncorhynchus mykiss* Evolutionarily Significant Unit. Report prepared for Yakima Basin Joint Board and submitted to the National Marine Fisheries Service.
- Ericksen, R., C. Watry, **I. Courter**, J. Vaughan, and S. Duery. 2010. Effects of Surface Water Withdrawals on Listed Fish. Report prepared for the Yakama Nation Fisheries Program in support of the mid Columbia coho reintroduction program.

- Courter, I.**, Casey Justice, and Steve Cramer. 2009. Flow and temperature effects on life history diversity of *Oncorhynchus mykiss* in the Yakima River basin. Report prepared for the Yakima Basin Joint Board. 46pp.
- Courter, I.I.**, S.P. Cramer, R. Ericksen, C. Justice, T. Nickelson, and B. Pyper. 2008. Klamath Coho Life-Cycle Model Final Report. Prepared for the U.S. Bureau of Reclamation, Klamath Basin Area Office. 152pp.
- Ackerman, N., B. Pyper, **I. Courter**, and S. Cramer. 2006. Estimation of Returns of Naturally Produced Coho to the Klamath River. Technical Memorandum prepared for the U.S. Bureau of Reclamation, Klamath Basin Area Office. 25pp.
- Justice, C. and **I. Courter**. 2007. Juvenile Coho Emigration Survival in the Klamath River. Technical Memorandum prepared for the U.S. Bureau of Reclamation, Klamath Basin Area Office. 24pp.
- Bartholomew, J.L. and **I.I. Courter**. 2007. Disease Effects on Coho Survival in the Klamath River. Technical Memorandum prepared for the U.S. Bureau of Reclamation, Klamath Basin Area Office. 26pp.
- Ericksen, R.P., S.P. Cramer, **I.I. Courter**, and K. Arendt. 2007. Simulation of the Life Cycle of Klamath Coho from Adult Entry to Summer Rearing. Technical Memorandum prepared for the U.S. Bureau of Reclamation, Klamath Basin Area Office. 30pp.
- Fox, M., **I. Courter**, B. Pyper, and S. Cramer. 2007. Evaluation of the Effects of “Flip-Flop” Operations on Spring Chinook Production in the Yakima Basin. *Flow evaluation study*. Prepared for The Yakima Basin Joint Board, Yakima, Washington. 85pp.
- Courter, I.** 2005. Defining What Constitutes a Wild Salmon. Masters Thesis submitted to Oregon State University.



Lauren Courter, Ph.D.

Senior Scientist, Toxicologist

Lauren Courter, Ph.D., is a toxicologist and founding scientist at Mount Hood Environmental (MHE), where she has served as a principal investigator in aquatic toxicology and water quality research for 14 years. She contributes regularly to MHE's technical reports and publications and leads projects across the Yakima, Umpqua, Crooked, Deschutes, and Columbia River Basins. Clients primarily include resource user groups. In addition, she participates in fisheries and amphibian field research conducted by other senior scientists at MHE.

Before joining MHE, Dr. Courter spent eight years in academic research, specializing in carcinogenesis, molecular toxicology, and neurobiology. She holds a Ph.D. in Toxicology from Oregon State University and a B.S. in Biology with a minor in Business Administration from Pacific University. She completed postdoctoral training in developmental neurobiology at Oregon Health and Science University.

Her consulting work includes evaluating the impacts of terrestrial and aquatic herbicide applications on sensitive aquatic species, assessing relic sediment contamination affecting ESA-listed salmonids, and supporting water quality and nutrient monitoring programs. She also serves as a consultant to private timber companies, leading herbicide monitoring to assess non-target impacts on human health and aquatic ecosystems.

Dr. Courter has been retained as a toxicology expert and expert witness in legal cases involving the potential toxic effects on surface and groundwater resources.

Education and Training

Ph.D., Toxicology. Oregon State University. 2007.

B.S., Biology, Minor in Business Administration. Pacific University. 2002

Professional Experience

Senior Scientist/Toxicologist, Co-Owner. Mount Hood Environmental. March 2011-Present.

Adjunct Research Faculty. Portland State University. 2012-2015.



Postdoctoral Research Fellow. Oregon Health & Science University. 2007-2009.

Publications

Caldwell, LK, **Courter, LA.** (2020). Abiotic factors influence surface water herbicide concentrations following silvicultural aerial application in Oregon's north coast range. *Integrated Environmental Assessment and Management*, 16(1), 114-127.

Courter LA, Garrison T, Courter II. (2016) Herbicide toxicity in salmon and steelhead revised after application of a novel seawater challenge assay. *Bulletin of Environmental and Contaminant Toxicology* 96(5): 573-579.

Courter LA and Gyselinck C. (2015) Endothall Concentration Exposure Time Evaluation against Horned Pondweed in a Hydrodynamic System. *Journal of Aquatic Plant Management* 53:160-164.

Pratt, EB, Wentzell, JS, Maxson, JE, **Courter, L,** Hazelett, D, Christian, JL. (2011). The cell giveth and the cell taketh away: An overview of Notch pathway activation by endocytic trafficking of ligands and receptors. *Acta Histochemica* 113(3): 248-255.

Courter, LA, Luch, A, Musafia-Jeknic, T, Arlt, VM, Fischer, K, Bildfell, R, Pereira, C, Baird, WM. (2008). The influence of diesel exhaust on polycyclic aromatic hydrocarbon-induced DNA damage, gene expression, and tumor initiation in Sencar mice in vivo. *Cancer Letters*, 265(1), 135-147.

Courter, LA, Pereira, C, Baird, WM. (2007). Diesel exhaust influences carcinogenic PAH-induced genotoxicity and gene expression in human breast epithelial cells in culture. *Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis*, 625(1-2), 72-82.

Courter, LA, Musafia-Jeknic, T, Fischer, K, Bildfell, R, Giovanini, J, Pereira, C, Baird, WM. (2007). Urban dust particulate matter alters PAH-induced carcinogenesis by inhibition of CYP1A1 and CYP1B1. *Toxicological Sciences*, 95(1), 63-73.

Courter, LA, Musafia-Jeknic, T, Ciganek, M., Machala, M., Baird, WM. (2007). Inhibition of CYP1A1 and CYP1B1 enzymes by aromatic compounds adsorbed on urban dust particulate matter. *Polycyclic Aromatic Compounds* 27(3):185-196.



Mahadevan, B, **Courter LA**, Baird, WM. (2007). Mutations induced by polycyclic aromatic hydrocarbons In: *New Developments in Mutation Research* (2007): 19-40.

Selected Technical Reports

Blackman, T., M. Roes, **L. Courter**, and B. Briscoe. 2021. Oregon Forest Practices Act Implementation Study: History, Issues, and Potential Solutions. Report prepared for the Oregon Department of Forestry. Mount Hood Environmental, Sandy, OR. 69 pp.

Briscoe, B., **L. Courter**, T. Blackman, and I. Courter. 2020. Timber harvest effects on summer stream flows. Technical memorandum prepared for the Oregon Forest Industries Council. Mount Hood Environmental, Boring, OR. 4 pp.

Courter, L., T. Blackman, I. Courter. 2020. Timber harvest effects on stream temperature. Technical memorandum prepared for the Oregon Forest Industries Council. Mount Hood Environmental, Boring, OR. 5 pp.

Blackman, T., **L. Courter**, B. Briscoe, I. Courter. 2020. Timber harvest effects on fish. Technical memorandum prepared for the Oregon Forest Industries Council. Mount Hood Environmental, Boring, OR. 6 pp.

Courter, LA, Caldwell, LK. (2018). Surface Water Monitoring for Forest Herbicide Residues in Commercial Timber Watersheds. Year 2 Final Technical Report submitted to Stimson Lumber Company. 41 pp.

Courter, LA, Caldwell, LK, Carpenter, FC, Belcher, L. (2016). Water Quality Monitoring for Forest Herbicide Residues in Surface Water in Commercial Timber Watersheds. Year 1 Final Technical Report to submitted to Stimson Lumber Company. 29 pp.

Courter LA. (2014) Technical Comments, Recommendations: Preliminary Draft of the Toxics Language Document for Water Quality Standards, Washington Depart. of Ecology WAC 173-201A-240. Technical Report on behalf of Washington State Water Resources Assoc.

Courter LA. (2012) Technical Comments, Recommendations on the Sediment Management Standards Rulemaking Document, Washington Department of Ecology Publication 12-09-054. Technical Report on behalf of Washington State Water Resources Assoc.

Courter LA. (2011) Teton Toxicity Data Review and Recommendations. Technical Report prepared for Washington State Water Resources Association.



LUP Hearings <lup-hearings@multco.us>

#T3-2022-16220: Additional Documents

Cottrell CPO <cottrellcpo@gmail.com>
To: LUP Hearings <LUP-hearings@multco.us>

Mon, May 5, 2025 at 10:57 AM



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LUP,

With regards to the remand of T3-2022-16220, please accept the following documents to be added to the record.

- Portland City Council Resolution 37402
- Curriculum Vitae of Ian Courter and Lauren Courter

Please acknowledge receipt of this email.

Thank you,
Cottrell CPO

2 attachments



37402 - December 2018.pdf
3267K



Courter-NR Experts-Resumes.pdf
634K