Quarterly Journal Article search : July-September 2023
Columbia Basin Fish & Wildlife Library

Atlas, W. I., S. Ma, Y. C. Chou, K. Connors, D. Scurfield, B. Nam, X. Ma, M. Cleveland, J. Doire, J. W. Moore, R. Shea, and J. Liu. 2023. Wild salmon enumeration and monitoring using deep learning empowered detection and tracking. Frontiers in Marine Science 10. https://doi.org/10.3389/fmars.2023.1200408

Species: Pacific salmon
Location: British Columbia
Other Keywords: Fish tagging, fish population assessment, deep learning

Atlas, W. I., Sloat, M. R., Satterthwaite, W. H., Buehrens, T., Parken, C. K., Moore, J. W., Mantua, N., Hart, J., and Potapova, A. 2023. Trends in Chinook salmon spawner abundance and total run size highlight linkages between life history, geography and decline. Fish and Fisheries 24(4):595– 617. https://doi.org/10.1111/faf.12750

Species: Chinook salmon
Location: Pacific Coast of North America
Other Keywords: Life history diversity, life history pathways, migration

Austin, C. S., C. E. Torgersen, and T. P. Quinn. 2023. Who spawns where? temperature, elevation, and discharge differentially affect the distribution of breeding by six Pacific salmonids within a large river basin. Canadian Journal of Fisheries and Aquatic Sciences 80(8):1365–1384. https://doi.org/10.1139/cjfas-2022-0252

Species: Pink, chum, coho, and Chinook salmon, bull trout, and steelhead
Location: Skagit River basin, Washington
Other Keywords: Spawning, habitat measurement and assessment

Babey, C. N., N. Gantner, and J. M. Shrimpton. 2023. Investigating patterns and extent of predation of hatchery-reared juvenile Nechako White Sturgeon (Acipenser transmontanus) by North American river otter (Lontra canadensis) in the Nechako River, British Columbia, Canada. Canadian Journal of Zoology 101(9):776–793. https://doi.org/10.1139/cjz-2022-0148

Species: White sturgeon
Location: Nechako River, British Columbia
Other Keywords: Predators, river otters, hatchery fish survival

Benoit, N. P., K. M. Robinson, C. T. Kellogg, M. A. Lemay, and B. P. Hunt. 2023. Using qPCR of environmental DNA (eDNA) to estimate the biomass of juvenile Pacific salmon (Oncorhynchus> spp.). Environmental DNA 5(4):683–696. https://doi.org/10.1002/edn3.422

Species: Pacific salmon
Location: British Columbia
Other Keywords: Genetic detection of organism presence, non-invasive genetic sampling

Bernos, T. A., M. C. Yates, M. F. Docker, A. Fitzgerald, R. Hanner, D. Heath, A. Imrit, J. Livernois, E. Myler, K. Patel, S. Sharma, R. Young, and N. E. Mandrak. 2023. Environmental DNA (Edna) applications in freshwater fisheries management and conservation in Canada: Overview of current challenges and opportunities. Canadian Journal of Fisheries and Aquatic Sciences 80(7):1170–1186. https://doi.org/10.1139/cjfas-2022-0162

Species: n/a
Location: Canada
Other Keywords: Genetic detection of organism presence, non-invasive genetic sampling

Cameron, A. S., A. M. Rub, and B. P. Sandford. 2023. Evaluation of healing progression at surgical incision sites and the use of antiseptics for enhancing post-operative survival in subyearling chinook salmon (Oncorhynchus tshawytscha). PLOS ONE 18(7). https://doi.org/10.1371/journal.pone.0288056
Species: Chinook salmon
Location: Columbia River
Other Keywords: Antiseptics, fish tagging

Chen, H., and Q. Li. 2023. Testing and applying baseflow approaches to environmental flow needs. Ecological Indicators 152. https://doi.org/10.1016/j.ecolind.2023.110363
Species: n/a
Location: Okanagan River, British Columbia
Other Keywords: Watershed management, environmental flow need

Ciocco, T., S. Tangen, and C. Smith. 2023. Actualizing indigenous knowledge in Tribal Wildlife Management: Basic Preconditions. Wildlife Society Bulletin 47(3). https://doi.org/10.1002/wsb.1467
Species: n/a
Location: North America
Other Keywords: Indigenous knowledge, tribal sovereignty

Clemens, B. J., J. K. Matley, N. V. Klinard, R. J. Lennox, L. K. Sortland, and S. J. Cooke. 2023. The need for reporting rationale and detailed methods in studies that surgically implant fish with electronic tracking devices. Fisheries 48(9):388–394. https://doi.org/10.1002/fsh.10963
Species: n/a
Location: n/a
Other Keywords: Fish tagging methods

Clemens, B. J., J. D. Romer, J. S. Ziller, and M. Jones. 2023. More flow in a regulated river correlates with more and earlier adult lamprey passage, but peak passage occurs at annual low flows. Ecology of Freshwater Fish 32(3):516–527. https://doi.org/10.1111/eff.12703
Species: Pacific lamprey
Location: McKenzie River, Oregon
Other Keywords: Fish passages, streamflow

Collins, E. E., J. E. Hess, S. Bechtol, N. Romero, S. R. Narum, and J. S. Zendt. 2023. Genetic monitoring of Steelhead in the Klickitat River to estimate productivity, straying, and Migration Timing. North American Journal of Fisheries Management 43(4):1000-1016. https://doi.org/10.1002/nafm.10921
Species: Steelhead
Location: Klickitat River, Washington
Other Keywords: Parentage-based tagging, genetic variation

Coutant, C. C. 2023. Hydropower peaking and stalled salmon migration are linked by Altered Reservoir Hydraulics: a multidisciplinary synthesis and hypothesis. River Research and Applications 39(8):1439-1456. https://doi.org/10.1002/rra.4146
Species: Chinook salmon

Location: Snake River
Other Keywords: Dam passage, stalled migration

Cunningham, D. S., D. C. Braun, J. W. Moore, and A. M. Martens. 2023. Forestry influences on salmonid habitat in the North Thompson River watershed, British Columbia. Canadian Journal of Fisheries and Aquatic Sciences 80(7):1053–1070. https://doi.org/10.1139/cjfas-2022-0255
Species: Salmonids
Location: North Thompson River Basin, British Columbia
Other Keywords: Forestry, pollution, water temperature

Duda, J. J., S. Jumani, D. J. Wieferich, D. Tullos, S. K. McKay, T. J. Randle, A. Jansen, S. Bailey, B. L. Jensen, R. C. Johnson, E. Wagner, K. Richards, S. J. Wenger, E. J. Walther, and J. A. Bountry. 2023. Patterns, drivers, and a predictive model of dam removal cost in the United States. Frontiers in Ecology and Evolution 11. https://doi.org/10.3389/fevo.2023.1215471
Species: n/a
Location: United States
Other Keywords: Dam removals

Efford, M., S. Taft, J. Morin, M. George, M. George, H. Cavers, J. Hilsden, L. Paskulin, D. Loewen, J. Zhu, V. Christensen, and C. Speller. 2023a. Archaeology demonstrates sustainable ancestral coast Salish salmon stewardship over thousands of years. PLOS ONE 18(8). http://dx.doi.org/10.1371/journal.pone.0289797
Species: Pacific Salmon
Location: Burrard Inlet, British Columbia
Other Keywords: Archaeology, resource stewardship, indigenous knowledge

Elmer, L. K., A. L. Bass, S. D. Johnston, K. H. Kaukinen, L. A. Kelly, S. Li, A. K. Teffer, K. M. Miller, S. J. Cooke, and S. G. Hinch. 2023. Changes in infectious agent profiles and host gene expression during spawning migrations of adult sockeye salmon (Oncorhynchus nerka). Canadian Journal of Fisheries and Aquatic Sciences 80(8):1313–1334. https://doi.org/10.1139/cjfas-2022-0132
Species: Sockeye salmon
Location: n/a
Other Keywords: Gene expression, migration, infection burdens, thermal refuges

Feddern, M. L., E. R. Schoen, R. Shaftel, C. J. Cunningham, C. Chythlook, B. M. Connors, A. D. Murdoch, V. R. von Biela, and B. Woods. 2023a. Kings of the North: bridging disciplines to understand the effects of changing climate on Chinook salmon in the Arctic–Yukon–Kuskokwim region. Fisheries 48(8):331–343. https://doi.org/10.1002/fsh.10923
Species: Chinook salmon
Location: Yukon River, Kuskokwim River, and Norton Sound
Other Keywords: Recovery planning, indigenous knowledge, climate change impacts

Finn, R. J., L. Chalifour, S. E. Gergel, S. G. Hinch, D. C. Scott, and T. G. Martin. 2023. Using systematic conservation planning to inform restoration of freshwater habitat and connectivity for salmon. Conservation Science and Practice 5(8). https://doi.org/10.1111/csp2.12973
Species: Pacific salmon
Location: Fraser River, British Columbia
Other Keywords: Recovery planning, habitat restoration effects

Ford, M. J., E. A. Berntson, P. Moran, and G. J. McKinney. 2023. Genomic divergence of hatchery- and natural-origin Chinook salmon (Oncorhynchus tshawytscha) in two supplemented populations. Conservation Genetics 24(2):167–179. https://doi.org/10.1007/s10592-022-01491-1

Species: Chinook salmon
Location: n/a
Other Keywords: hatchery and natural origin comparisons, genetic diversity

Gamble, M. M., and R. G. Calsbeek. 2023. Sex-specific heritabilities for length at maturity among Pacific salmonids and their consequences for evolution in response to artificial selection. Evolutionary Applications 16(8):1458–1471. https://doi.org/10.1111/eva.13579

Species: Salmonids
Location: n/a
Other Keywords: Genetic composition, hatchery effects

Greer, J. B., E. M. Dalsky, R. F. Lane, and J. D. Hansen. 2023. Tire-derived transformation product 6PPD-quinone induces mortality and transcriptionally disrupts vascular permeability pathways in developing Coho Salmon. Environmental Science & Technology 57(30):10940–10950. https://doi.org/10.1021/acs.est.3c01040

Species: Coho salmon
Location: n/a
Other Keywords: Pollution, tire runoff, urban stormwater runoff

Harding, L., I. R. Schultz, G. Young, and P. Swanson. 2023. Salmonid pituitary cells as a test system for identifying endocrine-disrupting compounds. Environmental Toxicology and Chemistry 42(8):1730–1742. https://doi.org/10.1002/etc.5644

Species: Salmonids
Location: n/a
Other Keywords: Hormonal levels, endogenous sex steroids

Ielpi, A., and M. G. A. Lapôtre. 2023. Modelling fire-induced perturbations in sediment flux based on stream widening and accelerated bank migration. CATENA 228. https://doi.org/10.1016/j.catena.2023.107173

Species: n/a
Location: Bonaparte River, British Columbia
Other Keywords: Wildfire impacts on streams, sediment transportation, climate change impacts

Isaak, D. J., and M. K. Young. 2023. Cold-water habitats, climate refugia, and their utility for conserving salmonid fishes. Canadian Journal of Fisheries and Aquatic Sciences 80(7):1187–1206. https://doi.org/10.1139/cjfas-2022-0302

Species: Salmonids
Location: Columbia River Basin
Other Keywords: Cold water habitats, climate change mitigation, water temperature

Jumani, S., L. Andrews, T. E. Grantham, S. K. McKay, J. Duda, and J. Howard. 2023. A decision-support framework for Dam Removal Planning and its application in Northern California. Environmental Challenges 12. https://doi.org/10.1016/j.envc.2023.100731

Species: n/a

Location: North Coast of California
Other Keywords: Dam removals, recovery planning

King, E., M. V. McPhee, S. C. Vulstek, C. J. Cunningham, J. R. Russell, and D. A. Tallmon. 2023. Alternative life-history strategy contributions to effective population size in a naturally spawning salmon population. Evolutionary Applications 16(8):1472–1482. https://doi.org/10.1111/eva.13580
Species: Coho Salmon
Location: Auke Creek, Alaska
Other Keywords: Life history pathways, genetic diversity

Kuiper, S. D., N. C. Coops, S. G. Hinch, and J. C. White. 2023. Advances in remote sensing of freshwater fish habitat: a systematic review to identify current approaches, strengths and challenges. Fish and Fisheries 24(5):829–847. https://doi.org/10.1111/faf.12772
Species: n/a
Location: n/a
Other Keywords: Remote sensing technologies, habitat measurement and assessment

Laramie, M. B., J. B. Dunham, F. H. Mejia, E. D. Heaston, and P. A. Bisson. 2023. Fishes of Harney basin revisited: an assessment of the distribution of native and introduced fishes over a half century. Northwestern Naturalist 104(2). https://doi.org/10.1898/NWN22-05
Species: n/a
Location: Harney Basin, Oregon
Other Keywords: Habitat restoration effects, climate change adaptation

Lawrence, M. J., T. S. Prystay, M. Dick, E. J. Eliason, C. K. Elvidge, S. G. Hinch, D. A. Patterson, A. G. Lotto, and S. J. Cooke. 2023. Metabolic constraints and individual variation shape the trade-off between physiological recovery and anti-predator responses in adult Sockeye Salmon. Journal of Fish Biology 103(2):280–291. https://doi.org/10.1111/jfb.15420
Species: Sockeye salmon
Location: Fraser River, British Columbia
Other Keywords: Aerobic budget, digestive physiology

Lennox, R. J., H. H. Berntsen, Å. H. Garseth, S. G. Hinch, K. Hindar, O. Ugedal, K. R. Utne, K. W. Vollset, F. G. Whoriskey, and E. B. Thorstad. 2023. Prospects for the future of pink salmon in three oceans: from the native Pacific to the novel Arctic and Atlantic. Fish and Fisheries 24(5):759–776. https://doi.org/10.1111/faf.12760
Species: Pink salmon
Location: Pacific, Arctic, and Atlantic oceans
Other Keywords: Climate change impacts, climate change adaptations

Lingard, S. A., A. L. Bass, K. V. Cook, M. Fortier, G. G. Price, and S. G. Hinch. 2023. Evaluating the influence of environmental and biological factors on migration behavior and residence duration of wild subyearling chinook salmon in a fjord estuary using miniature acoustic transmitters. Transactions of the American Fisheries Society 152(5):610–631. https://doi.org/10.1002/tafs.10429
Species: Chinook Salmon
Location: British Columbia
Other Keywords: Acoustic telemetry, estuary residence duration

Liu, O. R., E. J. Ward, S. C. Anderson, K. S. Andrews, L. A. K. Barnett, S. Brodie, G. Carroll, J. Fiechter, M. A. Haltuch, C. J. Harvey, E. L. Hazen, P.-Y. Hernvann, M. Jacox, I. C. Kaplan, S. Matson, K. Norman, M. Pozo Buil, R. L. Selden, A. Shelton, and J. F. Samhouri. 2023. Species redistribution creates unequal outcomes for multispecies fisheries under Projected Climate Change. Science Advances 9(33). https://doi.org/10.1126/sciadv.adg5468

Species: n/a
Location: Pacific Coast of North America
Other Keywords: Climate change, species distribution, climate change adaptation

McLaren, J. S., R. W. Van Kirk, P. Budy, and S. Brothers. 2023. The scale-dependent role of submerged macrophytes as drift-feeding lotic fish habitat. Canadian Journal of Fisheries and Aquatic Sciences 80(9):1533–1546. https://doi.org/10.1139/cjfas-2022-0182

Species: Macrophytes, rainbow trout
Location: Henrys Fork Snake River, Idaho
Other Keywords: Habitat selection, stream habitat assessments

Michel, C. J., M. E. Daniels, and E. M. Danner. 2023. Discharge-mediated temperature management in a large, regulated river, with implications for Management of Endangered Fish. Water Resources Research 59(9). https://doi.org/10.1029/2023WR035077

Species: n/a
Location: Sacramento River, California
Other Keywords: Water temperature, climate change impacts, reservoir discharge

Munsch, S. H., M. McHenry, M. C. Liermann, T. R. Bennett, J. McMillan, R. Moses, and G. R. Pess. 2023. Dam removal enables diverse juvenile life histories to emerge in threatened salmonids repopulating a heterogeneous landscape. Frontiers in Ecology and Evolution 11. https://doi.org/10.3389/fevo.2023.1188921

Species: Salmonids
Location: Elwha River, Washington
Other Keywords: Dam removal, habitat capacity, life history diversity

Nagasawa, K. 2023. Live freshwater parasite, Salmincola Californiensis (Copepoda: Lernaeopodidae), on the gills of an ocean-migrating steelhead trout (Oncorhynchus mykiss) and discussion on the origin and survival of the parasite at sea. Zoological Science 40(5). https://doi.org/10.2108/zs230031

Species: Steelhead
Location: n/a
Other Keywords: Copepod infection, parasitic transmission

Nims, M. K., T. J. Linley, and J. J. Moran. 2023. Temperature-dependent oxygen isotope fractionation in otoliths of juvenile Chinook salmon (Oncorhynchus tshawytscha). Applied Geochemistry 155. https://doi.org/10.1016/j.apgeochem.2023.105723

Species: Chinook salmon
Location: n/a
Other Keywords: Otolith mineralogy, oxygen isotope fractionation

Ortega, J. D., N. Hahlbeck, C. Derrickson, W. Tinniswood, T. Levi, and J. Armstrong. 2023. Thermal refuge use and parasitism: spatiotemporal variation in anchor worm and lamprey wounds on Klamath Redband Trout. Ecosphere 14(9). https://doi.org/10.1002/ecs2.4644

Species: Redband Trout, lamprey, anchor worm
Location: Klamath River
Other Keywords: Water temperature, parasitic transmission

Pearsons, T. N., and M. D. Miller. 2023. Stray compositions of hatchery-origin Chinook salmon and steelhead in natural spawning populations of the upper Columbia Watershed. Transactions of the American Fisheries Society 152(5):515-529. https://doi.org/10.1002/tafs.10434
Species: Chinook salmon, Steelhead
Location: Upper Columbia River Basin
Other Keywords: Genetic variation, hatchery releases, straying

Pearsons, T. N., P. J. Graf, and T. N. Taylor. 2023. Distribution and straying of Minijack Chinook Salmon released from a captive Broodstock Hatchery program. Transactions of the American Fisheries Society 152(4):397–414. https://doi.org/10.1002/tafs.10408
Species: Chinook salmon
Location: Columbia River Basin
Other Keywords: Straying, hatchery releases, genetics

Railsback, S. F., and B. C. Harvey. 2023. Can thermal refuges save salmonids? simulation of cold-pool benefits to salmonid populations. Transactions of the American Fisheries Society 152(4):383–396. https://doi.org/10.1002/tafs.10411
Species: Salmonids
Location: n/a
Other Keywords: Water temperature, cold water habitat, climate change mitigation

Rasmus, K. A., E. L. Petticrew, and J. Rex. 2023. The seasonal movement of sediment-associated marine-derived nutrients in a morphologically diverse riverbed: the influence of salmon in an interior British Columbia River. Journal of Soils and Sediments 23(10):3638–3657. http://dx.doi.org/10.1007/s11368-023-03563-2
Species: Pacific Salmon
Location: Fraser River Basin, British Columbia
Other Keywords: Marine-derived nutrients, flocculation

Rougemont, Q., T. Leroy, E. B. Rondeau, B. Koop, and L. Bernatchez. 2023. Allele surfing causes maladaptation in a Pacific salmon of conservation concern. PLOS Genetics 19(9). https://doi.org/10.1371/journal.pgen.1010918
Species: Coho salmon
Location: n/a
Other Keywords: Genetics, genetic variation, gene surfing

Rubin, S. P., M. M. Foley, I. M. Miller, A. W. Stevens, J. A. Warrick, H. D. Berry, N. E. Elder, M. M. Beirne, and G. Gelfenbaum. 2023. Nearshore subtidal community response during and after sediment disturbance associated with dam removal. Frontiers in Ecology and Evolution 11. https://doi.org/10.3389/fevo.2023.1233895
Species: Kelp, benthic invertebrates, fish
Location: Elwha River, Washington
Other Keywords: Dam removals, sediment transport

Sanborn, D., A. Base, L. Garavelli, R. Barua, J. Hong, and A. R. Nayak. 2023. Digital holography for real-time non-invasive monitoring of larval fish at Power Plant Intakes. Canadian Journal of Fisheries and Aquatic Sciences 80(9):1470–1481. https://doi.org/10.1139/cjfas-2023-0058

Species: n/a
Location: Canada
Other Keywords: Entrainment, digital holography, deep learning

Shaffer, J. A., J. Gross, M. Black, A. Kalagher, and F. Juanes. 2023. Dynamics of juvenile salmon and forage fishes in nearshore kelp forests. Aquatic Conservation: Marine and Freshwater Ecosystems 33(8):822–832. https://doi.org/10.1002/aqc.3957

Species: Kelp, Pacific salmon
Location: Pacific Coast of North America
Other Keywords: Ocean ecology, climate change adaptations, food webs

Shaffer, J. A., D. Parks, K. Campbell, A. Moragne, B. Hueske, P. Adams, and J. M. Bauman. 2023. Coastal Beaver, Chinook, coho, chum salmon and trout response to nearshore changes resulting from diking and large-scale dam removals: synergistic ecosystem engineering and restoration in the coastal zone. Nature Conservation 53:61–83. http://dx.doi.org/10.3897/natureconservation.53.85421

Species: Multiple
Location: Elwha River, Washington
Other Keywords: Dam removals, river geomorphology, habitat restoration planning

Smith, C. D., S. E. Payne, J. L. Morace, and E. B. Nilsen. 2023. Organohalogenated contaminants in multiple life stages of the Pacific Lamprey (Entosphenus tridentatus), Oregon, USA. Environmental Pollution 335. https://doi.org/10.1016/j.envpol.2023.122363

Species: Pacific lamprey
Location: Oregon
Other Keywords: Pollution, organohalogen compounds

Sridharan, V. K., D. Jackson, A. M. Hein, R. W. Perry, A. C. Pope, N. Hendrix, E. M. Danner, and S. T. Lindley. 2023. Simulating the migration dynamics of juvenile salmonids through rivers and estuaries using a hydrodynamically driven enhanced particle tracking model. Ecological Modelling 482. https://doi.org/10.1016/j.ecolmodel.2023.110393

Species: Chinook salmon
Location: Sacramento River, California
Other Keywords: Migration modeling

Stackhouse, L. A., N. C. Coops, J. C. White, P. Tompalski, J. Hamilton, and D. J. Davis. 2023. Characterizing riparian vegetation and classifying riparian extent using airborne laser scanning data. Ecological Indicators 152. https://doi.org/10.1016/j.ecolind.2023.110366

Species: n/a
Location: British Columbia
Other Keywords: Riparian cover, ecological modeling

Thomas, Z. R., D. A. Beauchamp, C. P. Clark, and T. P. Quinn. 2023. Seasonal shifts in diel vertical migrations by lake-dwelling coastal cutthroat trout, Oncorhynchus clarkii clarkii, reflect thermal regimes and prey distributions. Ecology of Freshwater Fish 32(4):822-832. https://doi.org/10.1111/eff.12725

Species: Cutthroat trout

Location: Lake Washington
Other Keywords: Migrations, water temperature

Wilson, K. L., A. C. Sawyer, A. Potapova, C. J. Bailey, D. LoScerbo, E. K. Sweeney-Bergen, E. E. Hodgson, K. J. Pitman, K. M. Seitz, L. K. Law, L. Warkentin, S. M. Wilson, W. I. Atlas, D. C. Braun, M. R. Sloat, M. T. Tinker, and J. W. Moore. 2023a. The role of spatial structure in at-risk metapopulation recoveries. Ecological Applications 33(6). https://doi.org/10.1002/eap.2898
Species: n/a
Location: n/a
Other Keywords: spatial structure, metapopulations, recovery planning

Wilson, S. M., J. H. Anderson, and E. J. Ward. 2023. Estimating phenology and phenological shifts with hierarchical modeling. Ecology 104(7). https://doi.org/10.1002/ecy.4061
Species: Chum salmon and Swainson's thrush
Location: n/a
Other Keywords: Climate change impacts, phenological modeling

Yao, W., D. Z. Zhu, M. T. Langford, J. A. Crossman, P. Li, A. Leake, and E. Parkinson. 2023. Combining hydro-acoustics and hydraulic modeling for evaluating fish entrainment risk. Ecological Engineering 194. https://doi.org/10.1016/j.ecoleng.2023.107022
Species: Kokanee salmon
Location: Revelstoke Dam, British Columbia
Other Keywords: Fish entrainment, hydraulic modeling