

Colorado Parks and Wildlife Research Publications

2023

- Adams, C. A., D. L. Winkelman, and R. M. Fitzpatrick. 2023. Impacts of wastewater treatment plant effluent on the winter thermal regime of two urban South Platte tributaries. *Frontiers in Environmental Science* 11:457. <https://doi.org/10.3389/fenvs.2023.1120412>
- Cadmus, P., R. J. Friebertshauser, N. Rhein, S. F. Brinkman, W. H. Clements. 2023 Subcellular Accumulation and Depuration of Zinc in Periphytic Algae during Episodic and Continuous Exposures. *Archives of Environmental Contamination and Toxicology*. 84:188–198.
- Chao Guo, Shiqi Li, Jie Ke, Chuansong Liao, A. G. Hansen, E. Jeppesen, Tanglin Zhang, Wei Li, and Jiashou Liu. 2023. The feeding habits of small-bodied fishes mediate the strength of top-down effects on plankton and water quality in shallow subtropical lakes. *Water Research* 233:119705.
- Erickson, T. A., G. J. Schisler, and E. R. Fetherman. 2023. Post-stocking survival and myxospore evaluation of whirling disease resistant Rainbow Trout strains. *North American Journal of Fisheries Management* 43:586-599.
- Johnston, D. B., and C. R. Anderson. 2023. Plant and mule deer responses to tree removal by three mechanical methods. *Wildlife Society Bulletin DOI: 10.1002/wsb.1421*
- Kopack, C. J., E. D. Broder, E. R. Fetherman, R. M. Fitzpatrick, and L. M. Angeloni. 2023. Assessing antipredator behavior and the potential to enhance it in a species of conservation concern. *North American Journal of Aquaculture* 85:136-145.
- Kotalik, C.J., J. S. Meyer, P. Cadmus, J. F. Ranville, and W. H. Clements. 2023. Integrated Assessment of Chemical and Biological Recovery after Diversion and Treatment of Acid Mine Drainage in a Rocky Mountain Stream. *Environmental Toxicology and Chemistry*. 42: 512-524.
- Kotalik, C. J., B. A. Wolff, J. P. F. Pomeranz, E. E. Richer, and W. H. Clements. 2023. Bioenergetic responses of a stream food web to habitat restoration: interactions between Brown Trout and invertebrate prey resources. *Restoration Ecology*. doi.org/10.1111/rec.13908
- Pybus, M. J., M. E. Wood, K. A. Fox, and B. A. Munk. 2023. Diseases and Parasites. In *Ecology and Management of Black-tailed and Mule Deer of North America*. CRC Press. pp. 103-124
- Riepe, T. B., E. R., Fetherman, B. Neuschwanger, T. Davis, A. Perkins, and D. L. Winkelman. 2023. Assessment of vertical transmission of *Renibacterium salmoninarum* in hatchery-reared Cutthroat Trout (*Oncorhynchus clarkii*). *Journal of Fish Diseases*. [doi:doi.org/10.1111/jfd.13745](https://doi.org/10.1111/jfd.13745)
- Shyvers, J. E., B. L. Walker, S. J. Oyler-McCance, J. A. Fike, and B. R. Noon. 2023. Genetic mark-recapture reveals large annual variation in pre-breeding sex ratio of greater sage-grouse.

Wildlife Biology e01085. <https://10.1002/wlb3.01085>.

Swearingen, T. C., R. W. Klaver, C. R. Anderson Jr., and C. N. Jacques. 2023. Influence of camera model and alignment on the performance of paired camera stations. *Wildlife Society Bulletin*; <https://doi.org/10.1002/wsb.1422>

Tripp, D. W., A. E. Sullivan, D. A. Sack, A. C. Emslie, and M. K. Drake. 2023. A low-pressure compressed air insecticide applicator to manage plague on prairie dog colonies using all-terrain vehicles. *Wildlife Society Bulletin*, 47(1):1402. doi: 10.1002/wsb.1402

Wood, M. E., W. H. Edwards, J. E. Jennings-Gaines, M. Gaston, P. Van Wick, S. Amundson, S. E. Allen, and L. L. Wolfe. 2023. Clearance of *Mycoplasma ovipneumoniae* in captive bighorn sheep (*Ovis Canadensis*) following extended oral doxycycline treatment. *Journal of Wildlife Diseases*, *Accepted*.

2022

Adams, C. M., D. L. Winkelman, P. A. Schaffer, D. L. Villeneuve, J. E. Cavallin, M. Ellman, K. S. Rodriguez, and R. M. Fitzpatrick. 2022. Elevated winter stream temperatures below wastewater treatment plants shifts reproductive development of Johnny Darter *Etheostoma nigrum*: a field and histological approach. *Fishes* 7:361. <https://doi.org/10.3390/fishes7060361>

Apa, A. D., J. H. Gammonley, D. J. Neubaum, E. Phillips, J. P. Runge, N. Seward, S. Wait, and B. Weinmeister. 2022. Survival rates of translocated Gunnison sage-grouse. *Wildlife Society Bulletin* e1245. <https://doi.org/10.1002/wsb.1245>

Avila, B. W., K. P. Huyvert, D. L. Winkelman, and E. R. Fetherman. 2022. Factors affecting post-challenge survival of *Flavobacterium psychrophilum* in susceptible Rainbow Trout from the literature. *Pathogens* 11:1318.

Avila, B. W., D. L. Winkelman, and E. R. Fetherman. 2022. Dual resistance to *Flavobacterium psychrophilum* and *Myxobolus cerebralis* in rainbow trout (*Oncorhynchus mykiss*, Walbaum). *Journal of Fish Diseases* 2022:1-13. doi: 10.1111/jfd.13605.

Bosco-Lauth, A.M., S. M. Porter, K. A. Fox, M. E. Wood, D. Neubaum, and M. Quilici. 2022. Experimental infection of Brazilian free-tailed bats (*Tadarida brasiliensis*) with two strains of SARS-CoV-2. *Viruses*, 14(8):1809. doi.org/10.3390/v14081809

Brandell, E. E., M. K. Jackson, P. C. Cross, A. J. Piaggio, D. R. Taylor, D. W. Smith, B. Boufana, D. R. Stahler, and P. J. Hudson. 2022. Evaluating noninvasive methods for estimating cestode prevalence in a wild carnivore population. *PLoS ONE*, 17(11): e0277420; doi.org/10.1371/journal.pone.0277420

Brandell, E. E., D. J. Storm, T. R. Van Deelen, D. P. Walsh, and W. C. Turner. 2022. A call to action: standardizing white-tailed deer harvest data in the Midwestern United States and

implications for quantitative analysis and disease management. *Frontiers in Ecology and Evolution*; <https://doi.org/10.3389/fevo.2022.943411>

Chao Guo, Shiqi Li, Wei Li, Chuansong Liao, Tanglin Zhang, Jiashou Liu, Lin Li, Jiaxin Sun, Xingwei Cai, and A. G. Hansen. 2022. Spatial variation in the composition and diversity of fishes inhabiting an artificial water supply lake, Eastern China. *Frontiers in Ecology and Evolution* 10:921082.

Cristan, E. T., A. G. Hansen, and J. M. Lepak. 2022. Effects of ethanol preservation on larval and juvenile walleye and gizzard shad body size. *North American Journal of Fisheries Management* 42:874-881.

Cubaynes, S., E. E. Brandell, D. R. Stahler, D. W. Smith, E. S. Almberg, S. Schindler, R. K. Wayne, A. P. Dobson, B. M. vonHoldt, D. R. MacNulty, P. D. Cross, P. J. Hudson, and T. Coulson. 2022. Disease outbreaks select for mate choice and coat color in wolves. *Science* 378:300–303; DOI: 10.1126/science.abi8745

Farrell, C. J., B. M. Johnson, A. G. Hansen, and C. A. Myrick. 2022. Induced triploidy reduces mercury bioaccumulation in a piscivorous fish. *Canadian Journal of Fisheries and Aquatic Sciences* 79:200-212 (2022 Editor's Choice Award).

Farrell, C. J., B. M. Johnson, A. G. Hansen, C. M. Myrick, E. C. Anderson, T. A. Delomas, A. D. Schreier, and J. P. Van Eenennaam. 2022. Cytological and molecular approaches for ploidy determination: results from a wild walleye population. *North American Journal of Fisheries Management* 42:849-856.

Fetherman, E. R., and B. W. Avila. 2022. Habitat associations of rainbow trout *Oncorhynchus mykiss* and brown trout *Salmo trutta* fry. *Journal of Fish Biology* 100:51-61.

Fisher, M. C., R. A. Prioreshi, L. L. Wolfe, J. P. Runge, K. A. Griffin, H. M. Swanson, and M. W. Miller. 2022. Apparent stability masks underlying change in a mule deer herd with unmanaged chronic wasting disease. *Communications Biology* 5(1):1-6.
doi.org/10.1038/s42003-021-02951-z

Fountain-Jones, N. M., S. Kraberger, R. Gagne, M. L. J. Gilbertson, D. R. Trumbo, M. Charleston, P. Salerno, W. C. Funk, K. Crooks, K. Logan, M. Alldredge, S. Dellicour, G. Baele, X. Didelot, S. VandeWoude, S. Carver, and M. E. Craft. 2022. Hunting alters viral transmission and evolution in a large carnivore. *Nature Ecology and Evolution* 6:174–182; doi: 10.1038/s41559-021-01635-5.

Gammonley, J. H., and J. P. Runge. 2022. Duck hunter activity, success, and satisfaction on public hunting areas. *Journal of Wildlife Management* e22210.<https://doi.org/10.1002/jwmg.22210>

Guo, C., L. Wei, L. Shiqi, M. Zhan, T. Zhang, J. Liu, A. G. Hansen, L. Lin, X. Cai, and B. J. Hicks. 2022. Manipulation of fish community structure effectively restores submerged aquatic vegetation in a shallow subtropical lake. *Environmental Pollution* 292:118459.

Hansen, A. G., E. T. Cristan, M. M. Moll, E. I. Gardunio, and J. M. Lepak. 2022. Factors influencing early growth of juvenile tiger trout stocked into subalpine lakes as biocontrol and to enhance recreational angling. *Fishes* 7:342.

Hansen, A. G., J. A. Gardner, K. A. Connelly, M. Polacek, and D. A. Beauchamp. 2022. Resource use among top-level piscivores in a temperate reservoir: implications for a threatened coldwater specialist. *Ecology of Freshwater Fish* 31:469-491.

Hayes, F. P., J. J. Millsbaugh, E. J. Bergman, R. M. Callaway, and C. J. Bishop. 2022. Effects of willow nutrition and morphology on calving success of moose. *Journal of Wildlife Management* 2022; <https://doi.org/10.1002/jwmg.22175>.

Holroyd, G., and R. Conrey. 2022. A Colorado visitor to Beaverhill Lake. *The Willet* 35(3): 12-13. (<http://beaverhillbirds.com/media/2309/vol35-3-november2022-2.pdf>)

Human-Cougar Interactions Science Review Team. 2022. Human-Cougar Interactions: A Literature Review Related to Common Management Questions. Washington Department of Fish and Wildlife, Olympia, Washington, USA. 78 pp. Authors: Brian Kertson, Scott McCorquodale, Donny Martorello, Chuck Anderson, Jr., Anis Aoude, Rich Beausoleil, Mick Cope, Mark Hurley, Bruce Johnson, Glen Sargeant, and Stephanie Simek.

Kowalski, D. A., R. J. Cordes, T. B. Riepe, J. D. Drennan, and A. J. Treble. 2022. Prevalence and distribution of *Renibacterium salmoninarum*, causative agent of bacterial kidney disease, in wild trout fisheries in Colorado. Pages 151-157 in the Proceedings of Wild Trout Symposium XIII: Reducing the Gap between Science and Public Opinion. Available at: https://www.wildtroutsymposium.com/Proceedings_13.pdf.

Kowalski, D. A., E. I. Gardunio, and C. A. Garvey. 2022. Evaluating the effects of an electric barrier on fish entrainment in an irrigation canal in Colorado. *River Research and Applications* 38(3): 539–547. doi:10.1002/rra.3915.

Lepak, J. M., A. G. Hansen, M. B. Hooten, D. Brauch, and E. M. Vigil. 2022. Rapid proliferation of the parasitic copepod, *Salmincola californiensis* (Dana), on kokanee salmon, *Oncorhynchus nerka* (Walbaum), in a large Colorado reservoir. *Journal of Fish Diseases* 45:89-98 (Received cover image for issue).

Meyer, C.J., K. A Cassidy, E. E. Stahler, E.E. Brandell, C. B. Anton, D. R. Stahler, and D. W. Smith. 2022. Parasitic infection increases risk-taking in a social, intermediate host carnivore. *Communications Biology* 5, 1180; <https://doi.org/10.1038/s42003-022-04122-0>

Neubaum, D., and K. Aagaard. 2022. Use of predictive distribution models to describe habitat use by Colorado bats. *Journal of Wildlife Management* 86: e22178. <https://doi.org/10.1002/jwmg.2217820>

Riepe, T. B., B. W. Avila, and D. L. Winkelman. 2022 Effects of 17 α -ethinylestradiol and density on juvenile fathead minnow survival and body size. *Journal of Aquatic Pollution and Toxicology* 6:60.

Rogers, K. B., J. R. Anderson, S. F. Brinkman and A. P. Martin. 2022. Inbreeding depression reduces fitness in Colorado's last remaining Greenback Cutthroat Trout: consequences for management. Pages 185-194 in J. S. Gregory, editor. *Proceedings of Wild Trout XIII Symposium: reducing the gap between science and public opinion*. West Yellowstone, Montana. Available online at <http://www.wildtroutsymposium.com/proceedings.php>.

Squires, J. R., J. S. Ivan, K. E. Paolini, L. E. Olson, G. M. Jones, and J. D. Holbrook. 2022. Keystone structures maintain forest function for Canada lynx after large-scale spruce beetle outbreak. *Environmental Research: Ecology* 2:011001; <https://iopscience.iop.org/article/10.1088/2752-664X/ac8eb7/meta>

Thorsen, N. H., J. E. Hansen, O. G. Stoen, J. Kindberg, A. Zedrosser, and S. C. Frank. 2022. Movement and habitat selection of a large carnivore in response to human infrastructure differs by life stage. *Movement Ecology*, 10 (52); doi.org/10.1186/s40462-022-00349-y

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Walker, B. L. 2022. Resource selection by greater sage-grouse varies by season and infrastructure type in a Colorado oil and gas field. *Ecosphere*. DOI:10.1002/ecs2.4018.

Watkins, B. E., E. J. Bergman, L. C. Dhaseleer, and L. J. Bernal. 2022. Factors influencing productivity and recruitment of elk in northern New Mexico. *Journal of Wildlife Management* 87: e22348; doi.org/10.1002/jwmg.22348

Wolfe, L.L., K. A. Fox, K.A. Griffin, and M. W. Miller. 2022. Mountain lions (*Puma concolor*) resist long-term dietary exposure to chronic wasting disease. *The Journal of Wildlife Diseases*, 58(1):40-49. [/doi.org/10.7589/JWD-D-21-00029](https://doi.org/10.7589/JWD-D-21-00029)

2021

Aagaard, K., R. Y. Conrey, and J. H. Gammonley. 2021. Spatial analysis of the nesting distribution of four priority raptor species in Colorado. *Journal of Raptor Research* 55:510-523.

Americanus, B., G. J. Schisler, J. L. Bartholomew, and S. D. Atkinson. 2021. *Myxobolus cerebralis* causes pre-sporogonic mortality in juvenile Mountain Whitefish *Prosopium williamsoni*. *Journal of Aquatic Animal Health*. doi.org/10.1002/aah.10125.

Apa, A. D., K. Aagaard, M. B. Rice, E. Phillips, D. Neubaum, N. Seward, J. R. Stiver, and S. Wait. 2021. Species distribution models for a threatened species: the Gunnison sage-grouse. *Wildlife Research* <https://doi.org/10.1071/WR20006>

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Esox lucius (Linnaeus, 1758) natal origins in a hydrologically complex river basin. *Fishes* 2021(6):1–14. <https://doi.org/10.3390/fishes6040067>

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Hooley-Underwood, Z. E., Thompson, K. G., and Bestgen, K. B. 2021. Razorback Sucker *Xyrauchen texanus* spawning in an intermittent Colorado tributary. *North American Journal of Fisheries Management*. 41:1151 - 1158.

Johnson, D. H., C. Anderson Jr., R. D. Applegate, L. Bailey, E. Cooch, J. Fieberg, A. B. Franklin, R. J. Gutierrez, K. V. Miller, J. D. Nichols, N. D. Niemuth, D. Otis, C. A. Ribic, M. M. Rowland, and T. L. Shaffer. 2021. Editorial Message: A perspective on the *Journal of Wildlife Management*. *Journal of Wildlife Management* 85:1305–1308; DOI: 10.1002/jwmg.22110.

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Kotalik, C. J., P. Cadmus, W. H. Clements. 2021. Before-After Control-Impact field surveys and novel experimental approaches provide valuable insights for characterizing stream recovery from acid mine drainage. *Science of the Total Environment*. 771(145419). doi.org/10.1016/j.scitotenv.2021.145419.

Kraberger, S., L. E. Serieys, C. Richet, N. M. Fountain-Jones, G. Baele, J. M. Bishop, M. Nehring, J. S. Ivan, E. S. Newkirk, J. R. Squires, M. C. Lund, S. P. Riley, C. C. Wilmers, P. D. van Helden, K. Van Doorslaer, M. Culver, S. VandeWoude, D. P. Martin, and A. Varsani. 2021. Complex evolutionary history of felid anelloviruses. *Virology* 562:176–189; doi: 10.1016/j.virol.2021.07.013.

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Logan, K. A., and J. P. Runge. 2021. Effects of hunting on a puma population in Colorado. *Wildlife Monographs* 209:1–35; 2021; DOI: 10.1002/wmon.1061.

❖ Shortlist for 2023 The Wildlife Society Wildlife Publications Award

Miller, M. W., and L. L. Wolfe. 2021. Inferring chronic wasting disease incidence from prevalence data. *Journal of Wildlife Diseases* 57. doi.org/10.7589/JWD-D-20-00216

Niemiec, R., R. Gruby, R., M. Quartuch, C. Cavaliere, T. Teel, K. Crooks, J. Salerno, J. Solomon, K. Jones, M. Gavin, A. Lavoie, A. Stronza, L. Meth, A. Enrici, K. Lanter, C. Browne, J. Proctor, and M. Manfredo. 2021. Integrating social science into conservation planning. *Biological Conservation* 262, <https://doi.org/10.1016/j.biocon.2021.109298>. (<https://www.sciencedirect.com/science/article/pii/S0006320721003505>).

Northrup, J. M.¹, C. R. Anderson Jr.¹, B. D. Gerber, and G. Wittemyer. 2021. Behavioral and demographic responses of mule deer to energy development on winter range. *Wildlife Monographs* 208:1–37; 2021; DOI: 10.1002/wmon.1060.

¹Authors contributed equally to this work.

❖ Top Cited Article 2020-2021

❖ Top Downloaded Article 2021-2022

❖ Shortlist for 2023 The Wildlife Society Wildlife Publications Award

Olsen, L. E., N. Bjornlie, G. Hanvey, J. D. Holbrook, J. S. Ivan, S. Jackson, B. Kertson, T. King, M. Lucid, D. Murray, R. Naney, J. Rohrer, A. Scully, D. Thornton, Z. Walker, and J. R. Squires. 2021. Improved prediction of Canada lynx distribution through regional model transferability and data efficiency. *Ecology and Evolution* 11:1667–1690; doi.org/10.1002/ece3.7157.

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Rayl, N. D., J. A. Merkle, K. M. Proffitt, E. S. Almberg, J. D. Jones, and P. C. Cross. 2021. Elk migration influences the risk of disease spillover in the Greater Yellowstone Ecosystem. *Journal*

of Animal Ecology 90:1264-1275.

Rheault, H., C. R. Anderson Jr., M. Bonar, R. R. Marrotte, T. R. Ross, G. Wittemyer and J. M. Northrup. 2021. Some memories never fade: inferring multi-scale memory effects on habitat selection of a migratory ungulate using step-selection functions. *Frontiers in Ecology and Evolution* 9:702818; doi: 10.3389/fevo.2021.702818.

Richer, E. E., M. C. Kondratieff, G. Policky, M. D. Robinson, M. Atwood, and M. R. Myers. 2021. From gold mining to gold medal fishery: evaluating the fishery response to stream restoration on the upper Arkansas River, Colorado. *North American Journal of Fisheries Management* 42:24-36.

Riepe, T. B., V. Vincent, V. Milano, E. R. Fetherman, and D. L. Winkelman. 2021. Evidence for the use of mucus swabs to detect *Renibacterium salmoninarum* in brook trout. *Pathogens* 2021, 10(4), 460. DOI: <https://doi.org/10.3390/pathogens10040460>.

Rohan, S. K., D. A. Beauchamp, T. E. Essington, and A. G. Hansen. 2021. Merging empirical and mechanistic approaches to modeling aquatic visual foraging using a generalizable visual reaction distance model. *Ecological Modelling* 457:109688.

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