

Kim Birnie-Gauvin, PhD

Tenure-Track Researcher

Section for Freshwater Fisheries & Ecology, Technical University of Denmark, Vejlsøvej 39, 8600 Silkeborg, Denmark | kbir@aqu.dtu.dk | www.kimbirniegauvin.com

Citizenship: Canadian

Year of Birth: 1993

EDUCATION

PhD in Fish Ecology 2016 – 2019

Technical University of Denmark, Silkeborg, Denmark

Dissertation: *The unspoken truth about impacted rivers – Consequences and implications of barriers for conservation of freshwater fish*

Supervisor: Dr. Kim Aarestrup

MSc in Biology 2015 – 2016

Carleton University, Ottawa Canada

Thesis: *Oxidative ecology of wild fish: investigating the effects of intrinsic and extrinsic factors on oxidative stress and its link to life-histories*

Supervisor: Dr. Steven J. Cooke

Honours BSc in Biology (specialization in Animal Physiology) 2011 – 2015

University of Ottawa, Ottawa Canada

Thesis: *Electrical connections in the pacemaker nucleus of *Apteronotus leptorhynchus*: expression of pannexins and connexins*

Supervisor: Dr. John E. Lewis

ACADEMIC POSITIONS

Tenure-track Researcher 2024 – present

Section for Freshwater Fisheries and Ecology, Technical University of Denmark (DTU Aqua) – Denmark

Villum International Postdoctoral Fellow 2021 – 2023

Department of Ecology, Evolution and Marine Biology, University of California Santa Barbara – United States of America

In collaboration with: Dr. Erika J. Eliason

Department of Fisheries & Oceans Canada

In collaboration with: Dr. David A. Patterson

Section for Freshwater Fisheries and Ecology, Technical University of Denmark (DTU Aqua) – Denmark

Postdoctoral Fellow 2019 – 2020

Section for Freshwater Fisheries and Ecology, Technical University of Denmark (DTU Aqua) – Denmark

Supervisor: Dr. Kim Aarestrup

FELLOWSHIPS, GRANTS AND AWARDS

Fellowships & Grants

The Forgotten of the North (Save Our Seas Foundation, ~\$6.000)	2024 – 2026
Digital Twin of the Ocean – Animal Tracking (~\$60.000)	2024 – 2026
Northeast Atlantic Marine Tracking Network (~\$60.000)	2024 – 2026
Sharks of the North (Carlsberg Infrastructure, ~\$80.000)	2023 – 2025
STRAITS (EU-Horizon, €3.500.000)	2023 – 2026
Villum International Postdoctoral Fellowship (~\$400.000)	2021 – 2023
Elisabeth & Knud Petersen Fund Grant (~\$6.000)	2019
NSERC Undergraduate Student Award(~\$4.000)	2014

Research & Speaking Awards

Best PhD Thesis Award, Technical University of Denmark	2020
Best Student Oral Presentation, University of Ottawa	2011
Best Honours Thesis, University of Ottawa	2011
University of Ottawa Entrance Award	2011 – 2014

TEACHING

Course Instructor	Management of Aquatic Ecosystems, Technical University of Denmark	2023 – present
Guest Lecturer	Ecology for Engineers (Lectures & field trip), Technical University of Denmark	2017 – present
Guest Lecturer	Conservation Biology (Lecture on Nutritional physiology and ecology of wildlife in a changing world), Nova Southeastern University	2022
Teaching Assistant	Advanced Animal Anatomy & Physiology, Carleton University	2016
Teaching Assistant	Human Physiology, Carleton University	2015 – 2016

SUPERVISION & MENTORING EXPERIENCE

Fenja-Marie Møller (Master Student, University of Kiel, Germany) <i>Monitoring the movement of fish at the Danish Straits</i> (co-supervisor)	2024 – present
Franziska Bockelmann (PhD Student, DTU) <i>Predator-prey interaction: the grayling and cormorant issue</i> (co-supervisor)	2024 – present
Magnus Højen Husen (PhD Student, DTU) <i>Effects of hypoxia on Atlantic cod – tissue and whole-animal level mechanisms</i> (co-supervisor)	2024 – present
Marie A. Pedaccini (PhD Student, DTU) <i>When and why are fish vulnerable?</i> (supervisor)	2023 – present
Cecilie I. Nilsen (PhD Student, NORCE) <i>Atlantic salmon migration through hydropower-impacted rivers</i> (co-supervisor)	2022 – present
Lene K. Sortland (PhD Student, DTU) <i>Bottlenecks facing Atlantic salmon smolts during their migration</i> (co-supervisor)	2022 – present
Noa Mayer (Master Student, University of British Columbia) <i>Pacific salmon thermal physiology</i> (mentor)	2021

SELECTED INVITED TALKS & SEMINARS

- **Birnie-Gauvin, K.** Biologging in wild fishes. Society for Experimental Biology, July 2025. Antwerp, Belgium. **Invited speaker** (planned)
- **Birnie-Gauvin, K.** Where, when and why do fish move? Leibniz-Institute of Freshwater Ecology and Inland Fisheries, June 2024. Berlin, Germany. **Invited speaker**
- **Birnie-Gauvin, K.** Where, when and why do fish move? Telemetry and how it can help us better manage fish. University of California Santa Barbara, January 2022. California, USA. **Invited speaker**
- **Birnie-Gauvin, K.** Rethinking the brown trout lifecycle: challenging some old paradigms. University College Cork, May 2021. Cork, Ireland. **Invited speaker**
- **Birnie-Gauvin, K.** Lessons learned from working with sea trout & Atlantic salmon. Carleton University, November 2020. Online. **Invited speaker**
- **Birnie-Gauvin, K.** Barrier removal and river restoration: benefitting fish, people and the economy. Dam Removal Europe, September 2019. Rennes, France. **Invited speaker**

PROFESSIONAL ORGANIZATIONS & COMMITTEES

American Fisheries Society (Physiology Section); Society for Experimental Biology; Fisheries Society of the British Isles; European Tracking Network (core group member since 2017); Ocean Tracking Network (part of the OTN Council)

EDITORIAL POSITIONS

Assistant Editor

Journal of Fish Biology
Fisheries

2023 – present
2024 – present

PROFESSIONAL SERVICE

Journal Reviews (>200 reviews): Science, River Research & Applications, Hydrobiologia, Conservation Physiology, Marine Ecology Progress Series, Journal of Animal Ecology, Ecology of Freshwater Fish, Freshwater Biology, Comparative Physiology & Biochemistry, Journal of Fish Biology, Integrative & Comparative Biology, Water and Environment Journal, Aquatic Conservation: Marine and Freshwater Ecosystems, Acta Zoologica, Functional Ecology, Ecohydrology, Reviews in Fish Biology and Fisheries, Diversity and Distribution

PUBLICATIONS (total citations = 2866, h-index = 26, i10-index = 48)

**Indicates supervisory role*

Publications in preparation

- 82 **Birnie-Gauvin, K.**, Butler, N., Hinch, S.G., Eliason, E.J. (*in prep*). Why do fish quit swimming at warm temperatures? CTswim and tissue-level mechanisms in Chinook fry and parr. Target journal: *Journal of Experimental Biology*.
- 81* Butler, N.A., Hinch, S.G., Lotto, A., Lunzmann-Cooke, E.L., **Birnie-Gauvin, K.**, & Eliason, E. J. (*in prep*). Assessing effects of acclimation temperature on upper thermal limits of stream-type juvenile Chinook salmon (*Oncorhynchus tshawytscha*) under ecologically relevant temperatures. Target journal: *Conservation Physiology*.
- 80 **Birnie-Gauvin, K.**, Van Wert, J. C., Mayer, N., Hendriks, B., Hinch, S. G., Eliason, E. J. (*in prep*). Rapid acclimation capacity at the tissue level in a salmonid. Target journal: *Global Change Biology*.
- 79* Mayer, N., Van Wert, J. C., **Birnie-Gauvin, K.**, Hendriks, B., Eliason, E. J., Hinch, S. G. (*in prep*). Sex- and lifestage specific thermal tolerance of kokanee salmon. Target journal: *Journal of Experimental Biology*.

Peer-reviewed publications in review

- 78 Birnie-Gauvin, K., Peiman, K. S., Patterson, D. A., Robinson, K. A., Power, M., Hinch, S. G., & Cooke, S. J. (*in review*). Stable isotope signatures reflect migration biology instead of ocean habitat quality in sockeye salmon. *Canadian Journal of Fisheries and Aquatic Sciences*.
- 77 Hellström, G., **Birnie-Gauvin, K.**, et al. (*in review*). New trophic insights associated with the return of a top predator, bluefin tuna, to Skagerrak and the Sound. *Fisheries Research*.

Peer-reviewed publications

- 76 Lennox, R.J., **Birnie-Gauvin, K.**, et al. (2025). Marine fish passage - underappreciated threats to connectivity within the marine environment. *Marine Ecology*, 46, e12859. doi: 10.1111/maec.12859
- 75 Aspillaga, E., Bruneel, S., Alós, J., Verhelst, P., Abecasis, D., Aarestrup, K., **Birnie-Gauvin, K.**, Afonso, P., Palmer, M., Reubens, J. (2024). Open Protocols, the new standard for acoustic tracking: results from interoperability and performance tests in European waters. *Animal Biotelemetry*, 12, 40. doi: 10.1186/s40317-024-00396-9
- 74 Lennox, R.J., Kambestad, M., Berhe, S., **Birnie-Gauvin, K.**, et al. (*in press*). The role of habitat in predator-prey dynamics and its applications. *Restoration Ecology*. doi: 10.1111/rec.14354
- 73 Lennox, R.J., Miller, K.M., Madhun, A., Schulze, A.D., Eldøy, S.H., Isaksen, T.E., Nilsen, R., Shea, D., **Birnie-Gauvin, K.**, et al. (*in press*). The pathobiome of *Salmo trutta* from the North Sea to the Barents Sea. *Journal of Biogeography*. doi: 10.1111/jbi.15047
- 72 Nielsen, E.E., **Birnie-Gauvin, K.**, et al. (2024). Genetic Sex and Origin Identification Suggests Differential Migration of Male and Female Atlantic Bluefin Tuna (*Thunnus thynnus*) in the Northeast Atlantic. *Evolutionary Applications*, 17, e70009.
- 71* Sortland, L.K., Jepsen, N., Kennedy, R., Koed, A., del Villar-Guerra, D., Lennox, R.J., **Birnie-Gauvin, K.**, & Aarestrup, K. (2024). The effect of trapping on the migration and survival of Atlantic salmon smolts. *River Research and Applications*, 40, 1971-1986. doi: 10.1002/rra.4348
- 70 Lennox, R.J., Nilsen, C.I., Dahlmo, L., Behre, S., Barlaup, B., Normann, E., Landro, Y., **Birnie-Gauvin, K.**, Cooke, S.J., & Vollset, K.W. (2024). A comparative study of the alternative life history of iteroparous salmonids. *Ecology of Freshwater Fish*, 33, e12786. doi: 10.1111/eff.12786
- 69 Özgül, A., **Birnie-Gauvin, K.**, et al. (2024). Tracking Aquatic Animals for Fisheries Management in European Waters. *Fisheries Management and Ecology*, 31, e12706. doi: 10.1111/fme.12706
- 68* Van Wert, J.C., **Birnie-Gauvin, K.**, Gallagher, J., Hardison, E.A., Landfield, K., Burkepile, D., & Eliason, E.J. (2024). Despite plasticity, heatwaves are costly for a coral reef fish. *Scientific Reports*, 14, 13320. doi: 10.1038/s41598-024-63273-8.
- 67* Sortland, L.K., Aarestrup, K., & **Birnie-Gauvin, K.** (*in press*). Comparing the migration behaviour and survival of Atlantic salmon and brown trout smolts. *Journal of Fish Biology (Special Issue: Advances in telemetry approaches and technologies applied to fish ecology and management)*. doi: 10.1111/jfb.15749
- 66 Colborne, S., Peiman, K.S., **Birnie-Gauvin, K.**, Larsen, M.H., Aarestrup, K., & Cooke, S.J. (2024). Effects of pre-winter cortisol exposure on condition, diet, and morphology of wild juvenile brown trout (*Salmo trutta*). *Journal of Experimental Zoology Part A*, 341, 282-292. doi: 10.1002/jez.2781
- 65 Jellyman, D., Franklin, P., Aarestrup, K., **Birnie-Gauvin, K.**, Baker, C., & Jellyman, P. (2024). Evidence of marine predation on silver New Zealand longfin eels, *Anguilla dieffenbachii*. *Fisheries Management and Ecology*. doi: 10.1111/fme.12695
- 64 Franklin, P.A., Jellyman, D., Baker, C., **Birnie-Gauvin, K.**, Jellyman, P., Aarestrup, K. (2023). Oceanic migration routes and behaviour of the New Zealand longfin eel (*Anguilla dieffenbachii*). *Marine Ecology Progress Series*, 724, 127-139. doi: 10.3354/meps14443
- 63* Källo, K., **Birnie-Gauvin, K.**, Baktoft, H., Leshner, C., Bekkevold, D., Grønkjær, P., Bederford, G., Aarestrup, K. (2024). Otolith microchemistry combined with genetics reveal patterns of straying and population connectivity in a salmonid. *Ecology of Freshwater Fish*, 33, e12760. doi: 10.1111/eff.12760
- 62 Lennox, R. J., Afonso, P., **Birnie-Gauvin, K.**, et al. (2024). Tracking aquatic animals to understand a world increasingly shaped by a changing climate and extreme weather events. *Canadian Journal of Fisheries and Aquatic Sciences*, 81, 326-339. doi: 10.1139/cjfas-2023-0145
- 61 Schwieterman, G. D., Hardison, E. A., Cox, G. K., Van Wert, J. C., **Birnie-Gauvin, K.**, & Eliason, E. J. (2023). Mechanisms of cardiac collapse at high temperature in a marine teleost (*Girella nigricans*). *Comparative Biochemistry and Physiology Part A*, 286, 111512. doi: 10.1016/j.cbpa.2023.111512

- 60 Thieme, M., **Birnie-Gauvin, K.**, Opperman, J. J., Franklin, P., Richter, H., Baumgartner, L., Ning, N., Vu, A.V., Brink, K., Sakala, M., O'Brien, G. C., Petersen, R., Tongchai, P., Cooke, S. J. (2023). Measures to safeguard and restore river connectivity. *Environmental Reviews*, 32, 366-386.
- 59 Lennox, R. J., Alos, J., Arlinghaus, R., Aspillaga, E., Bertram, M., **Birnie-Gauvin, K.**, et al. (2023). Positioning aquatic animals with acoustic transmitters. *Methods in Ecology and Evolution*, 14, 2514-2530. doi: 10.1111/2041-210X.14191
- 58 **Birnie-Gauvin, K.**, Patterson, D. A., Cooke, S. J., Hinch, S. G., Eliason, E. J. (2023). Anaerobic metabolism and recovery: roles and implications for mortality in Pacific salmon. *Reviews in Fisheries Science & Aquaculture*, 31, 497-522. doi: 10.1080/23308249.2023.2224902
- 57 Cooke, S. J., Harrison, I., Thieme, M., Landsman, S., **Birnie-Gauvin, K.**, Raghavan, R., Creed, I., Pritchard, G., Ricciardi, A., Hanna, D. E. L. (2023). Is it a new day for freshwater biodiversity? Reflections on outcomes of the Kunming-Montreal Global Biodiversity Framework. *PLOS Sustainability & Transformation*, 2, e0000065. doi: 10.1371/journal.pstr.0000065
- 56 Parasiewicz, P., Belka, K., Łapińska, M., Ławniczak, K., Prus, P., Adamczyk, M., Buras, P., Szlakowski, J., Kaczkowski, Z., Krause, K., O'Keeffe, J., Suska, K., Ligięza, J., Melcher, A., O'Hanley, J., **Birnie-Gauvin, K.**, et al. (2023). Over 200,000 kilometers of free-flowing river habitat in Europe is altered due to impoundments. *Nature Communications*, 14, 6289. doi: 10.1038/s41467-023-40922-6
- 55 **Birnie-Gauvin, K.**, Bordeleau, X., Eldøy, S. H., Bøe, K., Kristensen, M. L., Nilsen, C., Lennox, R. J. (2023). A review of iteroparity in anadromous salmonids: biology, threats and implications. *Reviews in Fish Biology and Fisheries*, 33, 1005-1025. doi: 10.1007/s11160-023-09773-8
- 54* Desforges, J. E., **Birnie-Gauvin, K.**, Jutfelt, F., Gilmour, K. M., Eliason, E. J., Dressler, T. L., McKenzie, D. J., Bates, A. E., Lawrence, M. J., Cooke, S. J. (2023). The ecological relevance of Critical Thermal Maxima methodology (CTM) for fishes. *Journal of Fish Biology*, 102, 1000-1016. doi: 10.1111/jfb.15368
- 53 **Birnie-Gauvin, K.**, Lynch, A. J., Franklin, P., Reid, A. J., Landsman, S. J., Tickner, D., Dalton, J., Cooke, S. J., Aarestrup, K. (2023). The RACE for freshwater biodiversity: Essential actions to create the social context for meaningful conservation. *Conservation Science and Practice*, 5, e12911. doi: 10.1111/csp2.12911
- 52 Rytwinski, T., Lin, H-Y., Harper, M., Smokorowski, K. E., Smith, A., Reid, J. L., Taylor, J. J., **Birnie-Gauvin, K.**, Bradford, M. J., Crossman, J. A., Kavanagh, R., Lapointe, N. W. R., Turgeon, K., & Cooke, S. J. (2023). How do natural changes in flow magnitude affect fish abundance and biomass in temperate regions? A systematic review. *Ecological Solutions and Evidence*, 4, e12216. doi: 10.1002/2688-8319.12216
- 51* Källo, K., **Birnie-Gauvin, K.**, Jepsen, N., & Aarestrup, K. (2023). Great cormorant (*Phalacrocorax carbo sinensis*) predation on adult anadromous brown trout (*Salmo trutta*). *Ecology of Freshwater Fish*, 32, 488-495. doi: 10.1111/eff.12701
- 50 Cooke, S. J., & **Birnie-Gauvin, K.** (2022). The conservation and restoration of freshwater ecosystems and biodiversity can be enhanced with ecopracticology. *Socio-Ecological Practice Science*, 4, 409-416. doi: 10.1007/s42532-022-00129-3
- 49* Källo, K., Baktoft, H., **Birnie-Gauvin, K.**, & Aarestrup, K. (2022). Variability in straying behaviour among repeat spawning anadromous brown trout (*Salmo trutta*) followed over several years. *ICES Journal of Marine Science*, 79, 2453-2460. doi: 10.1093/icesjms/fsac183
- 48 **Birnie-Gauvin, K.**, Berthelsen, C., Larsen, T., & Aarestrup, K. (2022). The physiological costs of reproduction in capital breeders. *Physiological and Biochemical Zoology*, 96, 40-52. doi: 10.1086/722136
- 47 Aarestrup, K., Baktoft, H., **Birnie-Gauvin, K.**, Sundelöf, A., Cardinale, M., Quilez-Badi, G., Onandia, I., Casini, M., Nielsen, E. E., Koed, A., Alemany, F., & MacKenzie, B.R. (2022). First tagging data on large Atlantic bluefin tuna returning to Nordic waters suggest repeated behaviour and skipped spawning. *Scientific Reports*, 12, 11772. doi: 10.1038/s41598-022-15819-x
- 46 Cooke, S. J., Bergman, J. N., Twardek, W. M., Piczak, M. L., Casselberry, G. A., Lutek, K., Dahlmo, L. S., **Birnie-Gauvin, K.**, Griffin, L. P. et al. (2022). The movement ecology of fishes. *Journal of Fish Biology*, 101, 756-779. doi: 10.1111/jfb.15153
- 45* Källo, K., Baktoft, H., Kristensen, M. L., **Birnie-Gauvin, K.**, & Aarestrup, K. (2022). High prevalence of straying in a wild brown trout (*Salmo trutta*) population in a fjord system. *ICES Journal of Marine Science*, 79, 1539-1547. doi: 10.1093/icesjms/fsac079

- 44 Cooke, S. J., Auld, H. L., **Birnie-Gauvin, K.**, Elvidge, C. K., Piczak, M. L., Twardek, W. M., Raby, G. D., Brownscombe, J. W., Midwood, J. D., Lennox, J. R., Madliger, C., Wilson, A. D. M., Binder, T. R., Schreck, C. B., McLaughlin, R. L., Grant, J., Muir, A. M. (2022). On the relevance of animal behavior to the management and conservation of fishes and fisheries. *Environmental Biology of Fishes*, 106, 785-810. doi: 10.1007/s10641-022-01255-3
- 43 Madliger, C. L., Creighton, M. J. A., Raby, G. D., Bennett, J. R., **Birnie-Gauvin, K.**, Lennox, R. J., & Cooke, S. J. (2022). Physiology as a tool for at-risk animal recovery planning: An analysis of Canadian recovery strategies with global recommendations. *Conservation Science and Practice*, 4, e12701. doi: 10.1111/csp2.12701
- 42 Cooke, S. J., Vermaire, J. C., Baulch, H. M., **Birnie-Gauvin, K.**, Twardek, W., & Richardson J. S. (2022). Our failure to protect the stream and its valley: A call to “back off” from riparian development. *Freshwater Science*, 41, 183-194. doi: 10.1086/719958
- 41 Koster, W., Aarestrup, K., **Birnie-Gauvin, K.**, Church, B., Dawson, D., Lyon, J., O’Connor, J., Righton, D., Rose, D., Westerberg, H., & Stuart, I. (2021). First tracking of the oceanic spawning migrations of Australasian short-finned eels (*Anguilla australis*). *Scientific Reports*, 11, 22976. doi: 10.1038/s41598-021-02325-9
- 40 Bubb, D., **Birnie-Gauvin, K.**, Tummers, J., Aarestrup, K., Jepsen, N., & Lucas, M.C. (2021). Short-term effects of low-head barrier removals on fish communities and habitats. *Frontiers in Ecology and Evolution* (Special Issue: Challenges and benefits of restoring river connectivity), 9, 697106. doi: 10.3389/fevo.2021.697106
- 39 **Birnie-Gauvin, K.**, Koed, A., & Aarestrup, K. (2021). Repeatability of migratory behaviour suggests trade-off between size and survival in a wild iteroparous salmonid. *Functional Ecology*, 35, 2717-2727. doi: 10.1111/1365-2435.13917
- 38 **Birnie-Gauvin, K.**, Bordeleau, X., Cooke, S.J., Davidsen, J.D., Eldøy, S.H., Eliason, E.J., Moore, A., & Aarestrup, K. (2021). Life-history strategies in salmonids: the role of physiology and its consequences. *Biological Reviews*, 96, 2304-2320. doi: doi.org/10.1111/brv.12753
- 37 **Birnie-Gauvin, K.**, Rytwinski, T., Harper, M., Taylor, J.J., Smith, A., Smokorowski, K.E., Turgeon, K., Bradford, M.J., & Cooke, S.J. (2021) How do natural changes in flow magnitude affect fish abundance and diversity in temperate regions? A systematic review protocol. *Ecological Solutions and Evidence*, 2, e12079. doi: 10.1002/2688-8319.12079
- 36 **Birnie-Gauvin, K.**, Larsen, M.H., Peiman, K.S., Midwood, J.D., Wilson, A.D.M., Cooke, S.J., & Aarestrup, K. (2021). No evidence for long-term carryover effects in a wild salmonid fish. *Physiological and Biochemical Zoology*, 94, 319-329. doi: 10.1086/716000
- 35* Desforges, J. E., **Birnie-Gauvin, K.**, Aarestrup, K., & Cooke, S. J. (2021). Upper thermal tolerance indicated by CTmax fails to predict migration strategy and timing, growth, and predation vulnerability in juvenile brown trout *Salmo trutta*. *Physiological and Biochemical Zoology*, 94, 215-227. doi: 10.1086/714636
- 34 **Birnie-Gauvin, K.**, Larsen, M. H., & Aarestrup, K. (2021). Energetic state and the continuum of migratory tactics in brown trout (*Salmo trutta*). *Canadian Journal of Fisheries and Aquatic Sciences*, 78, 1435-1443.
- 33 Belletti, B., Garcia de Leaniz, C., Jones, J., Bizzi, S., Börger, L., Segura, G., Castelletti, A., van de Bund, W., Aarestrup, K., Barry, J., Belka, K., Berkhuisen, A., **Birnie-Gauvin, K.**, et al. (2020). More than one million barriers fragment Europe’s rivers. *Nature*, 588, 436-441. doi: 10.1038/s41586-020-3005-2. **Featured on cover**
- 32 Lennox, R. J., Pulg, U., Malley, B., Gabrielsen, S. E., Hanssen, E. M., Cooke, S. J., **Birnie-Gauvin, K.**, Barlaup, B. T., & Vollset, K. W. (2020). On the various ways that anadromous salmonids use lake habitats to complete their life history. *Canadian Journal of Fisheries and Aquatic Sciences*, 78, 90-100. doi: 10.1139/cjfas-2020-0225
- 31 **Birnie-Gauvin, K.**, Nielsen, J., Frandsen, S. B., Olsen, H. M., & Aarestrup, K. (2020). Catchment-scale effects of river fragmentation: a case study on restoring connectivity. *Journal of Environmental Management*, 264, 110408. doi: 10.1016/j.jenvman.2020.110408
- 30 **Birnie-Gauvin, K.**, Lennox, R. J., Guglielmo, C. G., Teffer, A. K., Crossin, G. T., Norris, D. R., Aarestrup, K., Cooke, S. J. (2020). The value of experimental approaches in migration biology. *Physiological and Biochemical Zoology*, 93, 210-226. doi: 10.1086/708455
- 29 Koed, A., **Birnie-Gauvin, K.**, Sivebæk, F., & Aarestrup, K. (2020). From endangered to sustainable: multi-faceted management in rivers and coasts improves Atlantic salmon (*Salmo salar*) populations in Denmark. *Fisheries Management and Ecology*, 27, 64-76. doi: 10.1111/fme.12385.

- 28 **Birnie-Gauvin, K.**, Thorstad, E. B., & Aarestrup, K. (2019). Overlooked aspects of the *Salmo salar* and *Salmo trutta* lifecycles. *Reviews in Fish Biology & Fisheries*, 29, 749-766. doi: 10.1007/s11160-019-09575-x.
- 27 Lennox, R.J., Paukert, C., Aarestrup, K., Auger-Methe, M., Baumgartner, L., **Birnie-Gauvin, K.**, et al. (2019). 100 pressing questions on the future of global fish migration science, conservation, and policy. *Frontiers in Ecology and Evolution*, 7, 286. doi: 10.3389/fevo.2019.00286.
- 26 Kristensen, M. L., **Birnie-Gauvin, K.**, Aarestrup, K. (2019). Behaviour of veteran sea trout *Salmo trutta* L. in a dangerous fjord system. *Marine Ecology Progress Series*, 616, 141-153. doi: 10.3354/meps12940
- 25 **Birnie-Gauvin, K.**, Flavio, H., Kristensen, M. L., Walton-Rabideau, S., Cooke, S. J., Willmore, W. G., Koed, A., & Aarestrup, K. (2019). Cortisol predicts migration timing and success in both Atlantic salmon and sea trout kelts. *Scientific Reports*, 9, 2422.
- 24 **Birnie-Gauvin, K.**, Højrup, L. B., Kragh, T., Jacobsen, L., & Aarestrup, K. (2019). Getting cosy in freshwater: Assumed to be brackish pike are not so brackish after all. *Ecology of Freshwater Fish*, 28, 376-384. doi: 10.1111/eff.12460
- 23 **Birnie-Gauvin, K.**, & Aarestrup, K. (2018). A call for a paradigm shift: Assumed-to-be premature migrants actually yield good returns. *Ecology of Freshwater Fish*, 28, 62-68. doi: 10.1111/eff.12431
- 22 Kristensen, M. L., **Birnie-Gauvin, K.**, & Aarestrup, K. (2018). Routes and survival of anadromous brown trout *Salmo trutta* L. post-smolts during early marine migration through a Danish fjord system. *Estuarine, Coastal and Shelf Science*, 209, 102-109. doi: 10.1016/j.ecss.2018.05.015
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