PATRICK J. KENNEDY

ENVIRONMENTAL SCIENTIST | WATER RESOURCES & SUSTAINABILITY

Experienced environmental professional adept at planning, permitting, designing, and constructing complex environmental and engineering projects with functionally diverse teams. Experienced in leading technical disciplines and keeping efficient production of projects in multi-stakeholder environments. Applying creative and analytical approaches to operations for continuous process improvement. Skilled at identifying or anticipating problems and providing solutions. Excels through mentoring, training, and empowering teams to deliver projects on scope, schedule, and budget.

CONTACT

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Add me on LinkedIn

EDUCATION

Oregon State University (2020)
Graduate Coursework in Water Resources Management

University of Manitoba (2017)
M.Sc. Biological Sciences – Aquatic Ecology Emphasis

Illinois State University (2013)
B.S. Biological Sciences

CERTIFICATIONS

CORMIX Mixing Zone Model – Level 1 (MixZon, Inc.)

Fundamentals of GIS (Coursera – UC Davis)

Watershed Management Training & NPDES Permit Writers Training (U.S. EPA)

OSHA 10-Hour Construction Safety (RedVector)

SKILLS

Management/Leadership:

Project management, technical report/manuscript writing, project planning, project scheduling, project estimation & budgeting, financial analysis, environmental policy, regulatory approvals, life cycle assessment, quality control, proposal preparation, risk reviews/management, stakeholder engagement/management, contract management/closeout, data & file management

RELEVANT EXPERIENCE

PROJECT MANAGER – U.S. ARMY CORPS OF ENGINEERS 01/23-PRES.

- Manage $186.6 million of civil works projects associated with aquatic ecosystem restoration, flood risk management, navigation, hydropower, water supply, and other water resource related missions.
- Lead interdisciplinary teams and develop solutions to water resource challenges on schedule and within budget.
- Oversee project lifecycles, including SOWs, budgets, schedules, contracts, and risk management.
- Develop resource loaded schedules, monitor project performance using earned value management metrics, analyze financial data, and support the formulation of risk-informed decisions.
- Coordinate activities with customers and outside interests, including other Federal agencies, non-Federal sponsors, elected officials, the media and public.

ENVIRONMENTAL SCIENTIST – BURNS & MCDONNELL 03/21-01/23

- Environmental planning and permitting consultant for water resources and renewable energy projects.
- Conducted environmental impact assessments, aquatic ecological assessments, aquatic habitat evaluations, threatened and endangered species surveys, and water quality compliance monitoring and modeling.
- Assisted clients with CWA § 401, 402, 404, FEMA, FERC, ESA, MBTA, BGEPA, and Rivers and Harbors Act permitting/compliance.
- Planned and conducted CWA § 316(a) thermal variance demonstration, 316(b) cooling water intake, and mixing zone studies.
- Served as a technical specialist for hydrographic surveys and hydrodynamic modeling.
- Supervised junior staff while conducting field work.

ENVIRONMENTAL RESEARCH TECHNICIAN – MWRD CHICAGO 11/18-03/21

- Conducted fieldwork for projects investigating the aquatic ecology and water quality of Chicago area waterways.
- Provided oversight and completed field and lab activities associated with surface water and wastewater monitoring in accordance with NPDES permit compliance.
- Conducted fish population and macroinvertebrate surveys.
- Maintained and analyzed long-term water quality and biological databases for technical reports and publications.

RESEARCHER II – SOUTHERN ILLINOIS UNIVERSITY 03/18-11/18

- Coordinated and led field research on invasive carps' spatial ecology in the Upper Mississippi River basin to guide management strategies.
- Managed acoustic telemetry networks, conducted hydroacoustic surveys, and analyzed data to support technical reports on Illinois River fish populations.
- Conducted fish population surveys via electrofishing and gillnetting.
- Supervised students and technicians while conducting field and lab work.

Environmental:

Regulatory expertise (NEPA, CWA, ESA, CZMA, FEMA, FERC, MBTA, BGEPA, RHA), Engineering with Nature, nature-based solutions, aquatic habitat assessments, wetland delineations, mitigation planning, biodiversity assessments, ecological risk/impact assessments, threatened/endangered species surveys, hydrographic surveys, fish population surveys, aquatic vegetation surveys, mussel surveys, spatial analysis & mapping, remote sensing, water quality modeling, hydrodynamic modeling, wet chemistry, microbiological testing, soil sampling & characterization

Technical:

Microsoft Office, Power BI, ArcGIS Pro/Online, R Studio, R Shiny, R Markdown, Google Earth, Photoshop, CORMIX, Hypack, Primavera, RiverSurveyor, RIVERmorph, Echoview, Visual Acquisition, ImageJ

HONORS AND AWARDS

IISD-Experimental Lakes Area Research Grant (2017)

Clemens-Rigler Travel Award, Society of Canadian Limnologists (2017)

Department of Biological Sciences Travel Award, University of Manitoba (2016)

Faculty of Graduate Studies Travel Award, University of Manitoba (2016)

IISD-Experimental Lakes Area Graduate Fellowship, University of Manitoba (2015, 2016)

International Graduate Student Entry Scholarship, University of Manitoba (2015, 2016)

Best Student Poster, International Rainy-Lake of the Woods Watershed Forum (2015)

Rainy Lake Fisheries Charity Trust, Project: "Habitat and Community Dynamics as Drivers of Northern Pike (Esox Lucius) Growth Potential". PI: Dr. Michael D. Rennie (2015)

RESEARCH CONTRACTOR – UNIVERSITY OF MANITOBA 05/17-10/17

- Prepared, aged, and digitized images of Lake Trout and White Sucker otoliths and fin rays from the IISD-Experimental Lakes Area in Ontario, Canada, for analyses of recruitment, life history traits, and individual growth histories.
- Prepared, aged, and digitized images of Burbot otoliths from Fort Good Hope, Northwest Territories, Canada, for the Centre for Earth Observation Science.

LIMNOLOGY RESEARCH FELLOW – IISD-EXPERIMENTAL LAKES AREA 01/15-05/17

- Conducted whole-ecosystem limnology research in remote northern Ontario, studying the impact of climate change and pollutants (e.g., endocrine disrupting chemicals, nano-silver, acid rain) on glacial lakes.
- Implemented mark-recapture techniques on fishes, managed telemetry systems, profiled lakes, constructed and installed field equipment, and operated a variety of off-road vehicles and watercrafts.

GRADUATE RESEARCHER – UNIVERSITY OF MANITOBA 01/15-05/17

- Investigated the impact of prey community structure on aquatic apex predators' growth and life history in the Canadian Boreal Shield. Research resulted in 4 peer-reviewed publications.
- Modeled life histories of Northern Pike and Lake Trout across thousands of lakes, incorporating fish community, climate, and lake morphometry datasets.
- Conducted remote field research and analyzed changes in fish growth, condition, and resource use following aquaculture-induced alterations in lake oxy-thermal habitat and productivity at the IISD-Experimental Lakes Area.
- Wrote/marked exams and lectured laboratory sessions for Systematics and Biogeography of Fishes.

AQUATIC RESEARCH TECHNICIAN – ILLINOIS NATURAL HISTORY SURVEY 05/14-01/15

- Conducted limnology research and monitoring projects across the Upper Mississippi River watershed.
- Conducted fisheries surveys in the Illinois and Mississippi Rivers, surveyed zooplankton communities, monitored water quality, and assessed wetland restoration outcomes at the Nature Conservancy's Emiquon Preserve.

ENVIRONMENTAL SPECIALIST INTERN – ILLINOIS EPA 05/13-09/13

- Collected and analyzed surface water quality, invertebrate, macrophyte, and fisheries data from lakes, rivers, and streams throughout northern Illinois as part of the National Aquatic Resource Surveys.

RESEARCH ASSISTANT – ILLINOIS STATE UNIVERSITY 08/12-05/13

- Assisted with an agricultural stream ecology project examining watershed management practices and wetlands on water quality to promote denitrification and reduce nitrogen pollution in freshwater and the atmosphere.

PROFESSIONAL PUBLICATIONS

Kennedy, P. J., and Rennie, M. D. 2024. Variation in Female-Biased Sexual Size Dimorphism of Northern Pike (*Esox lucius*) Associated with Environment and Life History. Evolutionary Ecology. **DOI:** 10.1007/s10682-024-10295-3

EWN 2024. Engineering with Nature® Four Coasts Great Lakes: a report identifying design concepts for incorporating Engineering with Nature® approaches into the work of the Buffalo, Chicago, and Detroit Districts. Technical Report.

Happel, A., and **Kennedy, P. J.** 2023. Increased Fishing Quality of Chicago's Waterways Following the Clean Water Act. Fisheries Management and Ecology. **DOI:** 10.1111/fme.12635

Rennie, M. D., **Kennedy, P. J.**, Mills, K. H., Rodgers, C., Charles, C., Hrenchuk, L., Chalanchuk, S., Blanchfield, P. J., Paterson, M. J., and Podemski, C. L. 2019.

RELEVANT VOLUNTEER EXPERIENCE

Environmental Quality/Galleries Assistant, John G. Shedd Aquarium (2012-2024)

Young Professional Council, Alliance for the Great Lakes (2019-2021)

Canoe Guide, Friends of the Chicago River (2019-2020)

Freshwater Institute Representative, University of Manitoba (2015-2016)

Fisheries Tech., Ontario Ministry of Natural Resources (2015)

Impacts of freshwater aquaculture on fish communities: a whole-ecosystem experimental approach. Freshwater Biology. **DOI:** 10.1111/fwb.13269

Kennedy, P. J., Blanchfield, P. J., Kidd, K. A., Paterson, M. J., Podemski, C. L., and Rennie, M. D. 2018. Changes in the Early Growth, Condition, and Trophic Position of Lake Trout (*Salvelinus namaycush*) in Response to an Experimental Aquaculture Operation. Canadian Journal of Fisheries and Aquatic Sciences. **DOI:** 10.1139/cjfas-2017-0578

Kennedy, P. J., Bartley, T. J., Gillis, D. M., McCann, K. S., and Rennie, M. D. 2018. Offshore Prey Densities Facilitate Similar Life History and Behavioral Patterns in Two Distinct Aquatic Apex Predators, Northern Pike and Lake Trout. Transactions of the American Fisheries Society, 147: 972-995. **DOI:** 10.1002/tafs.10090

Kennedy, P. J. 2017. The Influence of the Prey Community on the Growth and Life History Variation of Aquatic Apex Predators in the Canadian Boreal Shield. Master's thesis, University of Manitoba.

SELECTED PRESENTATIONS

Davis, B. R.*, Mohan, R., and **P. J. Kennedy**. Jan. 2025. Dredging Sediments to Create Islands for a Great Lakes Delta Restoration in an Industrial Harbor and EPA Area of Concern Using Engineering with Nature Principles. 2025 Battelle Sediments Conference, Tampa, FL. (Presentation)

P. J. Kennedy*. Sept. 2023. Lower Green Bay & Fox River AOC Habitat Restoration Projects. Great Lakes Area of Concern Conference, Green Bay, WI. (Tour/Presentation)

P. J. Kennedy*. June 2023. Reuse, Restore, Replenish: Beneficial Use of Dredged Sediment in the Lower Green Bay – Fox River Area of Concern. Midwest Association of Fish and Wildlife Agencies Director's Meeting. (Presentation)

P. J. Kennedy* and M. D. Rennie. Jan. 2021. Sexual Size Dimorphism in Northern Pike (*Esox lucius*): Life History and Environmental Associations. IISD-Experimental Lakes Area Seminar Series. (Presentation)

Rennie, M. D.*, **Kennedy, P. J.**, Mills, K. H., Rodgers, C., Chalanchuk, S., Blanchfield, P. J., Paterson, M. J., and Podemski, C. L. Jan. 2018. Community-Level Impacts of an Experimental Aquaculture Operation. Canadian Conference for Fisheries Research, Edmonton, AB, Canada. (Presentation)

P. J. Kennedy* and M. D. Rennie. Jan. 2017. Northern Pike (*Esox lucius*) life history variation in the Canadian Boreal Shield: specialist or generalist predator? Canadian Conference for Fisheries Research, Montréal, QC, Canada. (Presentation)

P. J. Kennedy* and M. D. Rennie. Aug. 2016. Changes in the immature growth rates of a native salmonid in response to an experimental caged aquaculture operation. 146th American Fisheries Society Annual Meeting, Kansas City, MO. (Presentation)

P. J. Kennedy* and M. D. Rennie. Mar. 2016. Are pelagic prey the key to the trophy Northern Pike (Esox lucius)? Heart of the Continent Science Symposium, International Falls, MN. (Presentation)

P. J. Kennedy* and M. D. Rennie. Mar. 2016. The Influence of the pelagic prey community on the life history variation of Northern Pike in the Canadian Boreal Shield. International Rainy-Lake of the Woods Watershed Forum, International Falls, MN. (Presentation)

P. J. Kennedy*. Feb. 2016. An introduction to visualizing data using R and ggplot2. Community Ecology and Energetics Lab, Lakehead University, Thunder Bay, ON, Canada. (Workshop)

P. J. Kennedy* and M. D. Rennie. Mar. 2015. Evaluating changes in the growth and life history of Northern Pike (*Esox lucius*) in Rainy Lake, Ontario, Canada. International Rainy-Lake of the Woods Watershed Forum, International Falls, MN. (Poster)