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**MARY KATHRYN (KITTY) MCCRACKEN**

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# Summary of Skills

* Lead project manager of ORNL-Natural Resources Management Team Invasive Plant Management and Oak Ridge Reservation Bat Survey Plan.
* Co-project manager of ORNL-Natural Resources Management Team Native Grassland Community Management Plan.
* Extensive experience in a wide variety of ecology field techniques.
* Extensive experience in a wide variety of chemistry and biology laboratory techniques.
* Preparation and publication of scientific papers, posters, technical reports, and brochures.
* Experience with presentation at scientific conferences, public meetings, and a variety of organizations.
* Grant writing experience.
* Quality Assurance/Quality Control coordinator for Aquatic Ecology Group.
* Institutional Animal Care and Use Committee member

# Education

MA in Zoology. University of Tennessee, Knoxville, TN. Population Genetics Laboratory. August, 1988.

BA in Biology. Hope College, Holland, MI. May, 1974.

# Employment Experience

**February, 1987--present**

Senior Research Assistant,

Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN Supervisors: Ryan McManamay/Neil Giffen

**Significant Duties and Contributions**:

1. **ORNL Natural Resources Management Team Member.** 
   1. Tennessee Bat Working Group, member-at-large of Board of Directors since 2017.
   2. North American Society for Bat Research, member representing ORNL.
   3. Manage invasive pest plant control program on the Oak Ridge Reservation. This involves surveying for invasive plants on the 34,000-acre Oak Ridge Reservation, identifying and mapping areas of concern, selecting and managing subcontractors to herbicide treat designated areas, as well as direct oversight of ESD technical staff in invasive plant treatment. Budget management.
   4. Represent ORNL through lectures, nature walks, posters to staff, guests, and the general public regarding invasive plant identification and control.
   5. Represent ORNL as president of the Tennessee Invasive Plant Council.
   6. Board member of National Association of Invasive Plant Councils and Southeastern Exotic Pest Plant Council.
   7. Establish and manage native grassland community fields on the Oak Ridge Reservation.
   8. Project leader: Surveys for bat species population distribution on the Oak Ridge Reservation. Acoustic surveys. Mist net surveys. Data analysis. Cave surveys. Maintain Federal Permit to work with federally endangered bat species.Provide guidance on compliance with USFWS regulations on tree cutting and mitigation.
2. **Quality Assurance Coordinator for Ecological Assessment Team** 
   1. Serve as liaison between ORNL Quality Assurance Supervisor and Ecological Assessment Team members.
   2. Conduct surveillances and audits.
   3. Support staff in developing and updating QAP documents and management assessments.
   4. Assist with control of records, documents and data.
3. **Provide technical support** for all Principle Investigators within the Aquatic Ecology Group:

This includes both lab and field work. Work may involve developing new procedures and improving ones already in use. Write Research Safety Summaries and Standard Operating Procedures as necessary.

Tasks include:

* + 1. Fish Community Studies.
    2. Macroinvertebrate Community Studies.
    3. Reproductive Health Assessments.
    4. Fish Health Assessments.
    5. Toxicology Laboratory.

1. **Institutional Animal Care and Use Committee: Institutional representative.**  Assess all animal care and use protocols across ORN for compliance with AAALAC guidelines. Participate in facility inspections and audits. Provide information to researchers regarding animal care techniques.
2. **Lab space manager of ORNL Aquatic Ecology Building-main tank room.**  **National AAALAS** accreditation--provide data on animal care, health, and facility specifications. Maintain animals within these facilities. Provide guidance on animal care and treatment. Manage chemical inventory within this area.

**LSM of herbicide storage room, 1521, room 004.**

**G.** **Provide site-specific training to** field and laboratory personnel, students and other personnel working in these and other areas.

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**Master’s Degree Research:**  Gustin, M.K. 1988. Mitochondrial DNA variation in populations of the Mexican free-tailed bat, *Tadarida brasiliensis mexicana*. Master’s Thesis. University of Tennessee, Knoxville..**Determined geographic migration patterns**. Additionally, conducted and published Gustin, M.K. 1984. Scent recognition between mother and young Tadarida brasiliensis mexicana. Bat Research News. 25: 3/4. Abstract. Presentation.

**Awards and Professional Society Memberships**

Distinguished Achievement Award: Science Serving Society.ORNL Environmental Sciences Division. 2018

Tennessee Bat Working Group Board of Directors Member-at-large: 2013—present. Hosted annual meeting. 11/14/2018.

DOE Invasive Species Workgroup: Member. June 2017--present.

North American Society for Bat Research: Member. May 2017—present.

Tennessee Invasive Plant Council: President. 2014-present

Southeastern Exotic Pest Plant Council: Board Member. 2014--present

National Association of Invasive Plant Councils: Tennessee state representative to Board of Directors. 2014--present

Tennessee Prescribed Fire Council: Member. 2013--present

Association for Assessment and Accreditation of Laboratory Animal Care: Institutional Member. 2013--present

ORNL Technical Achievement Award. May l998.

Distinguished Achievement Award for Technical Support. Environmental Sciences Division. May, l998.

World-Class Teamwork Award. ORNL Values Committee. May l999.

ORNL Technical Communication Award for Technical Reports. “Thermal discharges from Paducah Gaseous Diffusion Plant outfalls: Impacts on stream temperatures and fauna of Little Bayou and Big Bayou Creeks.” Presented 25 Feb, l997.

ORNL Achievement Award. January, 1995. Reported in “Science Watch”. Third most highly cited 1992 Paper in Ecology and Environmental Sciences.(note: see \* under publications)

Science Alliance Graduate Student Award

Received in l985, 1986, and 1987

University of Tennessee

First Place Award, Graduate Student Honorarium for platform presentation 15th Annual North American Symposium on Bat Research.

October, 1984

**Selected Publications and Posters**

(Please note: M.K. Gustin =M.K. McCracken)

Peterson, M. J., J. M. Herold, M. K. McCracken, R.T. Jett, G. Byrd, S. Darling, B. Guge, N.R. Giffen, and C. R. DeRolph. 2018. Natural Resource Assessment for the Proposed Environmental Management Disposal Facility (EMDF), Oak Ridge, Tennessee. ORNL/TM-2018-515.

Carter, E., N.R. Giffen, K. McCracken, S. Darling, A. Deck, and G. Byrd. 2019. Wildlife Management Plan for the Oak Ridge Reservation. ORNL/TM-2012/387/R1.

Griffiths, et al. 2017. Water Quality Effects of Short-rotation Pine Management for Bioenergy Feedstocks in the Southeastern United States. Forest Ecology and Management. Vol. 400.

McCracken, M.K. and N. R. Giffen. 2017. Invasive Plant Management Plan for the Oak Ridge Reservation. ORNL/TM-2004/98/R2.

Peterson, et al. 2017. Using an Investigative Approach to Water Quality Compliance in Oak Ridge, Tennessee. Abstract. 2017 NAEP Annual Conference.

Griffiths, et al. 2016. Evaluating the Water Quality Effects of Short-rotation-Pine Production for Bioenergy Using a Watershed-scale Experiment. Abstract. Ecological Society of America Conference.

Griffiths, N.A., C.R. Jackson, M. Bitew, A.M. Fortner, K. Fouts, K. McCracken and J.R. Phillips. 2016. Water quality effects of short-rotation pine management for bioenergy feedstocks in the southeastern United States. Forest Ecology and Management.

Greeley, M.S., S.M. Adams, L.R. Elmore and M.K. McCracken. 2016. Influence of metal(loid) bioaccumulation and maternal transfer on embryo-larval development in fish exposed to a major coal ash spill. Aquatic Toxicology. Vol. 173, PP. 165-177.

McCracken, M.K., et al. 2015. Bat Species Distribution on the Oak Ridge Reservation. ORNL/TM-2015/248.

Haines, A.M. and M.K. McCracken. 2014. Bat trapping techniques. Discover Life in America Conference, Gatlinburg, TN. Poster.

Greeley, M.S. and M.K. McCracken. 2013. Evaluating the effects of the Kingston coal ash release on fish reproduction and early life stages: Long-term exposures to ash in the laboratory. ORNL TM-2013/11.

Greeley, M.S. and M.K. McCracken. 2013. Evaluating the effects of the Kingston coal ash release on fish reproduction and early life stages: In-vitro spawning study. ORNL TM-2013/10.

Greeley, M.S. and M.K. McCracken. 2013. Effects of sediment containing coal ash from the

Kingston ash release on embryo-larval development in the fathead minnow, *Pimephales promelas* (Rafinesque, 1820)

Ryon, M.G. et al. 2011. Technique for rapid establishment of American lotus in remediation efforts.

Adams, S.M. et al. 2010. Long-term biological monitoring of an impaired stream: implications for environmental management.

Christensen, S.W., C. Brandt and M.K. McCracken. 2010. Importance of data management in a long-term biological monitoring program.

McCracken, G.F., M.K. Gustin and A. T. Vawter. 1994. Genetic structure in migratory populations of the bat *Tadarida brasiliensis mexicana*. Journal of Mammalogy. 75: 500--514.

Norby, R.J., C.A. Gunderson, S.D. Wullschleger, E.G. O’Neill, and M.K. McCracken. 1993. McCracken, G.F. and M.K. Gustin. 1991. Nursing behavior in Mexican free-tailed bat maternity colonies. Ethology. 89: 305--321.

\*Norby, R.J., C.A. Gunderson, S.D. Wullschleger, E.G. O’Neill, and M.K. McCracken. 1991. Growth efficiency and compensatory response of yellow-poplar saplings in elevated CO2. Nature. 357: 322-324.

L.R. Shugart, M.K. Gustin, D.M. Laird and D.A. Dean. 1989. Susceptibility of DNA in aquatic organisms to strand breakage: effects of x-rays and gamma radiation. Marine Environmental Research. 28: 339--343.

Suter, G.W., M.K. Gustin, S.B. Floit, L.W. Barnthouse, J.F. McCarthy. 1988. Investigations of relationships between oil field materials and practices and wildlife: May-September, 1988. Progress report to EG & G Energy Measurements, Inc.

Gustin, M.K. 1988. Mitochondrial DNA variation in populations of the Mexican free-tailed bat, *Tadarida brasiliensis mexicana*. Master’s Thesis. University of Tennessee, Knoxville.

McCracken, G.F. and M.K. Gustin. 1987. Batmom’s daily nightmare. Natural History. 10/87.

Gustin, M.K. and G.F. McCracken. 1986. Scent recognition between females and pups in the bat *Tadarida brasiliensis mexicana*. Animal Behaviour. 35: 1, pp. 13--19.

McCracken, G.F., M.K. Gustin, and M.J. McKamey. 1986. Raccoons catch Mexican free-tailed bats on the wing. Bat Research News. 28: 1/2.

McCracken, G.F. and M.K. Gustin. 1982. Nursing in Mexican free-tailed bat colonies. Bat Research News. 23: 3/4. Abstract. Presentation.

**Selected Presentations:**

McCracken, M.K. 2019. Sharing a Passion for Ecosystem Stewardship and Preservation of Species. Presented to Wild Ones, Smoky Mountain Chapter. 7/11/2019.

McCracken, M.K. 2019. Invasive Plant Recognition and Control. Presentation to Knoxville Volunteer Forestry Certification Class. 5/27/2019.

McCracken, M. K., 2019. Natural Resource Management: Long-Term Stewardship. Earth Day Presentation. Oak Ridge National Laboratory.

McCracken, M.K. 2018. Successful Habitat Restoration Projects on the Oak Ridge Reservation. Presentation at Innovations in Invasive Plant Management Conference. 12/13/2018.

McCracken, M.K. 2018. Invasive Species: Defining the Problem for Urban Forestry. Presented to Knoxville Volunteer Forestry Certification Class. 5/18/18, 10/4/18.

McCracken, M.K. 2017. Invasive Species: Defining the Problem for Urban Forestry. Presented to Knoxville Volunteer Forestry Certification Class. 5/22/2017.

McCracken, M.K. 2017. Bats and Acoustic Recording on the Oak Ridge Reservation. Presented at an ORNL public nature walk. 5/19/2017.

McCracken, M.K. 2016. Managing Invasive Plants. Presented to Knoxville Parks and Greenways Dept.

McCracken, M. K. 2016. Invasive Plant Control Methods and Materials. Presented to Knoxville Garden Club.

McCracken, M. K. 2015. Developing a Management Plan for Control of Invasive Exotic Plants in State Parks and Historical Lands. Presented to Lookout Mountain Conservation Society. January, 2015. Chattanooga, TN.

McCracken, M.K. 2014. Controlling invasive plants on the Oak Ridge Reservation: An update. (Presentation to DOE-OR)

McCracken, M.K., et al. 2014. Bat Surveys on the Oak Ridge reservation. (presentation to the Discover Life in America Conference, Gatlinburg, TN.)

McCracken, M.K. 2013. (presentation to ORICLE) Kudzu Management on the Oak Ridge Reservation: Progress in the fight against invasives.McCracken, M.K. 2012. Controlling invasive plants on the Oak Ridge Reservation. (presentation to ORICLE)

\*\*Gustin, M.K. 1987. Variation of mitochondrial DNA in populations of Mexican free-tailed bats. Bat Research News. 28: 3/4. Abstract. Presentation.

Gustin, M.K. 1984. Scent recognition between mother and young Tadarida brasiliensis mexicana. Bat Research News. 25: 3/4. Abstract. Presentation.