Kerrie J. Beckett, PhD

Senior Project Scientist
Ecological Risk Assessor
Marine Scientist

Capabilities

Ecological Studies and Risk Assessment:

- Ecological risk assessments
- Endangered & threatened species risk assessment
- Habitat mapping and ecological characterization
- Ecological receptor identification
- Sampling and study designs
- Mammal, shorebird, amphibian and mussel surveys
- Snow tracking and scent post surveys
- Literature research and compilation
- Neurotoxicity studies
- Reproductive toxicity
- Carcinogenesis studies

Marine and Aquatic Studies:

- Aquatic surveys, including intertidal and subtidal habitats
- Benthic invertebrate surveys and sampling
- Essential Fish Habitat (EFH) assessments
- Marine mammal surveys and impact studies
- Marine and intertidal organism taxonomy
- Kelp and eelgrass habitat surveys
- Marine ecological characterization

Education and Training

Ph.D. Dual Degree, Animal Science and Environmental Toxicology, 2005, Michigan State University

M.A. Marine Ecotoxicology, 2000. University of Alaska Fairbanks

B.A. Zoology, 1991. University of Montana

Office of Radiation, Chemical and Biological Safety (ORCBS): Radiation Safety, Chemical Safety, Bloodborne Pathogen and Radiation Laboratory Training.

Cryo-sectioning, Histology & Pathology, IDEX & QBC: Blood Chemistry & Hematology, Other Clinical Diagnostic Testing, Surgical Procedures and Clinical Medicine (both wildlife and domestic species).

Awards

College of Natural Sciences, Dissertation Completion Fellowship, MSU, Summer 2004
Hartsough Award, Mink Farmers Research Foundation, 2001 and 2002
Schaible Award for Academic Excellence, Department of Animal Science, MSU, 2001
School of Fisheries and Ocean Sciences, Research Fellowship, UAF-Alaska, 2000
Sea Grant Honors Fellowship, UAF-Alaska, 1999
Ken Turner Memorial Fellowship, UAF-Alaska, 1998

Dr. Beckett is a Senior Project Scientist at Stantec responsible for designing and performing ecological characterizations and sampling programs, and evaluating ecological risks in terrestrial, marine, and aquatic environments. She has designed and conducted research projects that have led to a solid record of scientific achievement in toxicology, marine science, and wildlife biology. Dr. Beckett offers particular expertise in animal science, ecotoxicology, marine biology, wildlife biology, and zoology, with experience in both academic and private industry settings.

Dr. Beckett has conducted large-scale surveys of wildlife and coastal habitats from Alaska to New England, and has performed studies of threatened and endangered species, marine mammals, large mammals (including brown bear, moose, bighorn sheep, and mountain goats), invertebrate species, and shorebirds. Dr. Beckett has also prepared human health risk assessments based on evaluations of databases, literature searches, hazard analyses, and dose-response evaluations.

Certifications

- SCUBA Certification
- Winter Emergency Care Technician and Winter Search and Rescue / Avalanche and Mountaineering, MT
- Red Cross and Water Certifications: WSI, CPR, First Aid, Lifeguard Training, Coaching Certification
- Professional/National Ski Patrol Member
- FAA Marine Airway Communications
- Wilderness safety responder and Forest Fire Fighter, MT
- Co-Director of Equestrian Program, Therapeutic Riding; NAHRA Instructor Certification
- Director of Youth Aquatics Program, Therapeutic Swimming

Affiliations

- National Wildlife Rehabilitation Association
- Marine Conservation Association
- Society of Environmental Toxicology and Chemistry
- Society for Marine Mammalogy

Recent Publications

Beckett, K.J., B. Yamini and S.J. Bursian. (2007). The effects of 3,3',4,4',5-pentachlorobiphenyl (PCB 126) on mink (*Mustela vison*) reproduction and kit survivability and growth. *Archives of Environmental Chemistry and Toxicology*, published on-line 03 August, 2007. Journal publication (2008), **54**:123-129.

Zwiernik, M.J., **K.J. Beckett**, S.J. Bursian, D.P. Kay, R.R. Holem, J.N. Moore, B. Yamini , and J.P. Giesy. (2007). Chronic effects of polychlorinated dibenzofurans on mink in laboratory and field conditions. Resubmitted to *Environmental Science &Technology*, September 07, 2007.

Zwiernik, M.J., D.P. Kay, J. Moore, **K.J. Beckett**, J.S. Khim, J.L. Newsted, S. Roark, and J.P. Giesy. (2007). Exposure and effects assessment of resident mink exposed to polychlorinated dibenzofurans and other dioxin-like compounds in the Tittabawassee River Basin, Midland, MI, USA on Wild Mink (*Mustela vison*). Submitted to *Environmental Science &Technology*, September 07, 2007.

Aylward, L.L., R.A. Budinsky, S. Bursian, D.P. Kay, J.P. Giesy, J. Newsted, J. Moore, C.J. Rowland, K. Woodburn, S. Fitzgerald, **K.J. Beckett**, and M. Zwiernik. (2007). Range finding study with ecologically relevant dietary concentrations of 2,3,7,8-TCDF and 2,3,4,7,8-PeCDF in mink (*Mustela vison*). Submitted to "*Dioxin 2007*".

Bursian, S.J., **K.J. Beckett**, B. Yamini, P.A. Martin, K. Kannan, K.L. Shields and F.C. Mohr. 2006*a*. Assessment of effects in mink caused by consumption of carp collected from the Saginaw River, Michigan, USA. *Archives of Environmental Contamination and Toxicology*, **50**(4):614-623.

Bursian, S.J., C. Sharma, R.J. Aulerich, B. Yamini, R.R. Mitchell, **K.J. Beckett,** C.E. Orazio, D. Moore, S. Svirsky and D.E. Tillitt. 2006*b*. Dietary exposure of mink (*Mustela vison*) to fish from the Housatonic River, Berkshire County, MA, USA: Effects on organ weights and histology and hepatic concentrations of polychlorinated biphenyls and 2,3,7,8-tetrachlorodibenzo-*p*-dioxin toxic equivalents. *Environmental Toxicology and Chemistry*, **25**(6):1541-1550.

Beckett, K.J., S.D. Millsap, A.L. Blankenship, M.J. Zwiernik, J.P. Giesy, and S.J. Bursian. (2005). Squamous epithelial lesion of the mandibles and maxillae of wild mink (Mustela vison) naturally exposed to polychlorinated biphenyls. *Environmental Toxicology and Chemistry*, Vol. 24, No. 3:674-677.

Beckett, K.J., R.J. Aulerich, L.K. Duffy, J.S. Patterson, and S.J. Bursian. (2002). Effects of dietary exposure to environmentally relevant concentrations of weathered Prudhoe Bay crude oil in ranch-raised mink (Mustela vison). *Bulletin of Environmental Contamination and Toxicology*, Vol. 69: 593-600.

Aulerich, R.J., S.J. Bursian, **K.J. Beckett**, and A.C. Napolitano. (2002). Probiotics as feed supplements to enhance mink kit growth and survival. Fur Rancher: Blue Book of Fur Farming, Vol. 82, No. 2: 6-9; V. Becker (Ed), Becker Publishing, Eden Prairie, MN.

Beckett, K.J. *Amchitka Island: Recovery and Reconnaissance of Wildlife after Military Nuclear Testing*. (1997). School of Fisheries and Ocean Sciences, UAF, Fairbanks, AK

Beckett, K.J. *Discovering Marine Mammals: Fun Facts.* (1996). An educational booklet emphasizing facts and trivia on Alaskan marine mammals for elementary ages; Seward, AK

Beckett, K.J. *Howard Air Force Base: Riding Stable Charter of Operations – Revisited*. (1993-1994). Howard Air Force Base (of the USAF), Republic of Panama, Central America.

Experience

Stantec Consulting. 2007 – Present. Senior Project Scientist.

Woodlot Alternatives, Inc. 2006 – 2007. Senior Project Scientist.

NSF International. 2005. Senior Toxicologist.

Private Consulting. 2004 – 2006. Toxicologist.

Michigan State University. 2000 – 2005. Research Assistant. 1999 – 2000. Visiting Scholar and Project Assistant (Stress Physiology).

Alaska Sealife Center, Seward, AK.

1998 – 1999. Research Assistant.

Alaska Department of Fish and Game.

1997 – 1998. Bio-Technician.

University of Alaska Fairbanks. 1997 – 1999. Researcher, Graduate Student.

National Park Service. 1997 – 1998. Bio-Technician.

North Gulf Oceanic Society. 1995 – 1998. Wildlife Behaviorist and Naturalist.

Institute of Marine Science - Sponsor. 1995 – 1998. Wildlife Rehabilitation Coordinator.

Smithsonian Tropical Research Institute. 1993 – 1994. Research Assistant.

Univ. of MT. 1988 – 1990. Field Technician.
Univ. of MT – Glacier National Park. 1988. Field Technician.

Univ. of MT. 1986 – 1990. Lab Assistant and Animal Caretaker.

Univ. of MT. 1986 – 1989. Lab Technician.

Montana Fish, Wildlife and Parks Service. 1986 – 1988. Field Technician.

Contact: kerrie.beckett@stantec.com
(207) 729-1199

Abstracts and Poster Sessions

Zwiernik, M.J., J.N., Moore, S.J. Bursian, S.D. Fitzgerald, A.C. Napolitano, D.P. Kay, J.L. Newsted, **K.J. Beckett**, L.L. Aylward, and J.P. Giesy. (2007). Kinetic Evaluation of Exposure to Ecologically Relevant Concentrations of 2,3,7,8-TCDF and 2,3,4,7,8-TCDF to Mink. Proceedings of 28th Annual Society of Environmental Toxicology and Chemistry (SETAC) Conference, Milwaukie, WI, (Abstract)

Moore J.N., M. Hecker, M.J. Zwiernik, P.W. Bradley, S.D. Fitzgerald, J.L. Newsted, M.S. Shotwell, D.P. Kay, E.B. Higley, L.L. Aylward J.S. Khim, **K.J. Beckett**, S.J. Bursian, and J.P. Giesy. (2007). Effects of Polychlorinated Dibenzofurans (PCDFs) on P450 Enzyme Induction, Jaw Histology and Tissue Morphology in Mink (*Mustela vison*) in a Kinetic Feeding Study. Proceedings of 28th Annual Society of Environmental Toxicology and Chemistry (SETAC) Conference, Milwaukie, WI (Abstract)

Moore, J.N., M.J. Zwiernik, S.J. Bursian, **K.J. Beckett**, D.W. Hamman, P.W. Bradley, B. Yamini, S.D. Fitzgerald, D.P. Kay, M.S. Shotwell, J.L. Newsted, M. Hecker, L.L. Aylward, and J.P. Giesy. (2006). Kinetics of Two Polychlorinated Dibenzofurans (PCDFs) in Mink (*Mustela vison*): A Laboratory Feeding Study. The 27th Annual Society of Environmental Chemistry and Analytical Chemistry (SETAC) North American Meeting, Montreal, Quebec (Abstract)

Beckett, K.J. et al. (2004). *In Utero* Exposure to Crude Oil in Ranch-Raised Mink (*Mustela vison*) Kits Results in Neurological Damage. Proceedings of the 4th World Congress of the Society of Environmental Toxicology and Chemistry (SETAC), Portland, OR (Abstract)

Beckett, K.J. et al. (2003). Weathered Crude Oil Causes Severe Reproductive Dysfunction in Mink (*Mustela vison*). Proceedings of 24th Annual Society of Environmental Toxicology and Chemistry (SETAC) Conference, Austin, TX (Abstract)

Beckett, K.J. et al. (2003). Wild Mink Exposed to PCBs in the Environment Exhibit Mandibular and Maxillary Hyperproliferation of Squamous Epithelium. Proceedings of 24th Annual Society of Environmental Toxicology and Chemistry (SETAC) Conference, Austin, TX (Abstract)

Beckett, K.J. et al. (2003). Can the Mandibular and Maxillary Squamous Cell Proliferation in Mink (*Mustela vison*) be Considered Malignant Neoplasia? Proceedings of 24th Annual Society of Environmental Toxicology and Chemistry (SETAC) Conference, Austin, TX (Abstract)

Beckett, K.J. et al. (2002). PCB 126 induces mandibular and maxillary psuedocarcinomatous hyperplasia and reproductive dysfunction in mink (*Mustela vison*). Proceedings of 23rd Annual Society of Environmental Toxicology and Chemistry (SETAC) Conference, Salt Lake City, UT (Abstract)

Beckett, K.J. et al. (2001). Effects of dietary exposure to weathered Prudhoe Bay crude oil in ranch-raised mink (*Mustela vison*). Proceedings of 22nd Annual SETAC Conference, Baltimore, MD (Abstract)

Beckett, K.J. et al. (2001). Mink (*Mustela vison*) as a model for marine mammals: effects of dietary exposure to weathered Prudhoe Bay crude oil. Proceedings of 14th Biennial Conference on the Biology of Marine Mammals, Vancouver, B.C. (Abstract)

Beckett, K.J. et al. (2000). Non-invasive research: laboratory techniques to measure and monitor stress effects on health and welfare. Proceedings of MSU-ANR Week, East Lansing, MI (Abstract)

Beckett, K.J. et al. (1998). Non-invasive stress measurements and immune function in harbor seal (*Phoca vitulina*) pups. Proceedings of American Association for the Advancement of Science and International Arctic Science Conference, Fairbanks, AK (Abstract)

Presentations

*A Unique Jaw Lesion Induced by PCB 126 in Mink (*Mustela vison*)*. (2005). ANS 417 (Spring) Topics in Toxicology; MSU, E. Lansing, MI

Mink as an Animal Model of PCB 126-Induced Carcinogenicity. (2004). ANS 407 (Fall), Food and Animal Toxicology; MSU, E. Lansing, MI

Mink in Toxicology: A Unique Jaw Lesion Induced by PCB 126 in Mink. (2004). ANS 417 (Spring) Lecture Series, Topics in Toxicology; MSU, E. Lansing, MI

Does In Utero *Exposure to Crude Oil in Ranch-Raised Mink (*Mustela vison*) Kits Induce Neurotoxicological Consequences?* (2003). Invited Speaker: UAF Basic Neuroscience Program Seminar, Fairbanks, AK

Pre-Weaning Stress Effects on Piglet Endocrinology and Neuro-development. (2000). Dept. of Animal Science, MSU, E. Lansing, MI

Why Pinnipeds? An Overview of Research with Marine Mammals. (2000). Dept. of Animal Science, MSU, E. Lansing, MI

Research and Rehabilitation: Current Projects and Science at the Alaska Sealife Center. (1998). Alaska Sealife Center, Seward, AK

Rehabilitation: Its role in Science. (1998). School of Fisheries and Ocean Sciences, UAF, Fairbanks, AK

Canaries of the Sea: Beluga Whales and Contaminants. (1998). School of Fisheries and Ocean Sciences, UAF, Fairbanks, AK

Rehabilitation of Marine Mammals, with Ignited Issues. (1997). School of Fisheries and Ocean Sciences, UAF, Fairbanks, AK