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NORTH AMERICAN MOOSE HEALTH

Recent Literature 2015-2020

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General Review Articles

A review of parasites and disease impacting moose in North America

Citation:

DeCesare, N. J., Newby, J. R., & Ramsey, J. M. (2015). A Review of Parasites and Disease Impacting Moose in North America. *Intermountain Journal of Sciences*, 21(1-4), 62-62.

The status and management of moose in North America-circa 2015

Citation:

Timmermann, H. R., & Rodgers, A. R. (2017). The status and management of moose in North America-circa 2015. *Alces: A Journal Devoted to the Biology and Management of Moose*, 53, 1-22.

Winter Ticks

Cornell Wildlife Health Lab Winter Tick Fact Sheet

Fecundity and summer calf survival of moose during 3 successive years of winter tick epizootics

Citation:

Jones, H., Pekins, P. J., Kantar, L. E., O'Neil, M., & Ellingwood, D. (2017). Fecundity and summer calf survival of moose during 3 successive years of winter tick epizootics. *Alces: A Journal Devoted to the Biology and Management of Moose*, 53, 85-98.

Mortality assessment of moose (*Alces alces*) calves during successive years of winter tick (*Dermacentor albipictus*) epizootics in New Hampshire and Maine (USA)

Citation:

Jones, H., Pekins, P., Kantar, L., Sidor, I., Ellingwood, D., Lichtenwalner, A., & O'Neal, M. (2019). Mortality assessment of moose (*Alces alces*) calves during successive years of winter tick (*Dermacentor albipictus*) epizootics in New Hampshire and Maine (USA). *Canadian Journal of Zoology*, 97(1), 22-30.

Internal gross pathology of moose experimentally infested with winter ticks

Citation:

Addison, E. M., & McLaughlin, R. F. (2019). INTERNAL GROSS PATHOLOGY OF MOOSE EXPERIMENTALLY INFESTED WITH WINTER TICKS. *Alces: A Journal Devoted to the Biology and Management of Moose*, 55, 37-41.

Using agent-based models to inform the dynamics of winter tick parasitism of moose

Citation:

Healy, C., Pekins, P. J., Atallah, S., & Congalton, R. G. (2020). Using agent-based models to inform the dynamics of winter tick parasitism of moose. *Ecological Complexity*, 41, 100813.

Effects of winter ticks and internal parasites on moose survival and fecundity in Vermont, USA

Citation:

DeBow, Jacob Richard, "Effects of Winter Ticks And Internal Parasites On Moose Survival And Fecundity In Vermont, USA" (2020). *Graduate College Dissertations and Theses*. 1196. <https://scholarworks.uvm.edu/graddis/119>

Potential vertical transmission of winter ticks (*Dermacentor albipictus*) from moose (*Alces americanus*) dams to neonates

Citation:

Severud, W. J., & DelGiudice, G. D. (2016). Potential vertical transmission of winter ticks (*Dermacentor albipictus*) from moose (*Alces americanus*) dams to neonates. *Journal of Wildlife Diseases*, 52(1), 186-188.

Grooming and rubbing behavior by moose experimentally infested with winter ticks (*Dermacentor albipictus*)

Citation:

Addison, E. M., Fraser, D. J., & McLaughlin, R. F. (2019). GROOMING AND RUBBING BEHAVIOR BY MOOSE EXPERIMENTALLY INFESTED WITH WINTER TICKS (*DERMACENTOR ALBIPICTUS*). *Alces: A Journal Devoted to the Biology and Management of Moose*, 55, 23-35.

Selective habitat use by moose during critical periods in the winter tick life cycle

Citation:

Healy, C., Pekins, P. J., Kantar, L., Congalton, R. G., & Atallah, S. (2018). Selective habitat use by moose during critical periods in the winter tick life cycle. *Alces: A Journal Devoted to the Biology and Management of Moose*, 54, 85-100.

Tick development on sexually-active bull moose is more advanced compared to that of cow moose in the winter tick, *Dermacentor albipictus*

Citation:

Yoder, J. A., Pekins, P. J., Dobrotka, C. J., Fisher, K. A., Kantar, L., McLellan, S., ... & Klompen, H. (2019). Tick development on sexually-active bull moose is more advanced compared to that of cow moose in the winter tick, *Dermacentor albipictus*. *International Journal for Parasitology: Parasites and Wildlife*, 9, 56-59.

Assessing the relationships of winter ticks, weather and a declining moose population in northern New Hampshire

Citation:

Powers, Brent Illig, "Assessing the Relationships of Winter Ticks, Weather and a Declining Moose Population in Northern New Hampshire" (2019). *Master's Theses and Capstones*. 1330. <https://scholars.unh.edu/thesis/1330>

Assessing age structure, winter ticks and nutritional condition as potential drivers of fecundity in Montana moose

Citation:

Newby, J. R., DeCesare, N. J., & Gude, J. A. (2016). Assessing Age Structure, Winter Ticks and Nutritional Condition as Potential Drivers of Fecundity in Montana Moose. *Intermountain Journal of Sciences*, 22(4), 110-111.

Using snow urine samples to assess the impact of winter ticks on moose calf condition and survival

Citation

Ellingwood, D., Pekins, P. J., & Jones, H. (2019). Using snow urine samples to assess the impact of winter ticks on moose calf condition and survival. *Alces: A Journal Devoted to the Biology and Management of Moose*, 55, 13-21.

Recruitment of winter ticks (*Dermacentor albipictus*) in contrasting forest habitats, Ontario, Canada

Citation:

Addison, E. M., McLaughlin, R. F., Addison, P. A., & Smith, J. D. (2016). Recruitment of winter ticks (*Dermacentor albipictus*) in contrasting forest habitats, Ontario, Canada. *Alces: A Journal Devoted to the Biology and Management of Moose*, 52, 29-40.

Evidence for transmission of the zoonotic apicomplexan parasite *Babesia duncani* by the tick *Dermacentor albipictus*

Citation:

Swei, A., O'Connor, K. E., Couper, L. I., Thekkiniath, J., Conrad, P. A., Padgett, K. A., ... & Shirkey, N. (2019). Evidence for transmission of the zoonotic apicomplexan parasite *Babesia duncani* by the tick *Dermacentor albipictus*. *International journal for parasitology*, *49*(2), 95-103.

Water balance attributes for off-host survival in larvae of the winter tick (*Dermacentor albipictus*; Acari: Ixodidae) from wild moose

Citation:

Yoder, J. A., Pekins, P. J., Jones, H. F., Nelson, B. W., Lorenz, A. L., & Jajack, A. J. (2016). Water balance attributes for off-host survival in larvae of the winter tick (*Dermacentor albipictus*; Acari: Ixodidae) from wild moose. *International Journal of Acarology*, *42*(1), 26-33.

Low and high thermal tolerance characteristics for unfed larvae of the winter tick *Dermacentor albipictus* (Acari: Ixodidae) with special reference to moose

Citation:

Holmes, C. J., Dobrotka, C. J., Farrow, D. W., Rosendale, A. J., Benoit, J. B., Pekins, P. J., & Yoder, J. A. (2018). Low and high thermal tolerance characteristics for unfed larvae of the winter tick *Dermacentor albipictus* (Acari: Ixodidae) with special reference to moose. *Ticks and Tick-Borne Diseases*, *9*(1), 25-30.

Larval behaviour of the winter tick, *Dermacentor albipictus* (Acari: Ixodidae): evaluation of CO₂ (dry ice), and short-and long-range attractants by bioassay

Citation:

Yoder, J. A., Pekins, P. J., Lorenz, A. L., & Nelson, B. W. (2017). Larval behaviour of the winter tick, *Dermacentor albipictus* (Acari: Ixodidae): evaluation of CO₂ (dry ice), and short-and long-range attractants by bioassay. *International Journal of Acarology*, *43*(3), 187-193.

Enhancement of fur and skin from bull moose with additional entomopathogenic fungi that offer increased protection against damage from winter ticks

Citation:

Yoder, J. A., Pekins, P. J., Dobrotka, C. J., Fisher, K. A., Randazzo, C. R., Kantar, L., ... & O'Neal, M. (2019). Enhancement of fur and skin from bull moose with additional entomopathogenic fungi that offer increased protection against damage from winter ticks (*Dermacentor albipictus*; Acari: Ixodidae). *International Journal of Acarology*, 45(3), 97-105.

Susceptibility of winter tick larvae and eggs to entomopathogenic fungi-*Beauveria bassiana*, *Beauveria caledonica*, *Metarhizium anisopliae*, and *Scopulariopsis brevicaulis*

Citation:

Yoder, J. A., Pekins, P. J., Nelson, B. W., Randazzo, C. R., & Siemon, B. P. (2017). Susceptibility of winter tick larvae and eggs to entomopathogenic fungi-*Beauveria bassiana*, *Beauveria caledonica*, *Metarhizium anisopliae*, and *Scopulariopsis brevicaulis*. *Alces: A Journal Devoted to the Biology and Management of Moose*, 53, 41-51.

Entomopathogenic fungi of the winter tick in moose wallows: a possible bio-control for adult moose?

Citation:

Yoder, J. A., Dobrotka, C. J., Fisher, K. A., LeBarge, A. P., Pekins, P. J., & McLellan, S. (2018). Entomopathogenic fungi of the winter tick in moose wallows: a possible bio-control for adult moose?. *Alces: A Journal Devoted to the Biology and Management of Moose*, 54, 55-70.

Entomopathogenic fungi isolated from Yukon soil against unfed larvae of the winter tick, *Dermacentor albipictus*

Citation:

Klever, L. A., Fisher, K. A., & Yoder, J. A. (2019). Entomopathogenic fungi isolated from Yukon soil against unfed larvae of the winter tick, *Dermacentor albipictus*. *Studies in Fungi* 4(1), 123–134.

Vertical transmission of the entomopathogenic soil fungus *Scopulariopsis brevicaulis* as a contaminant of eggs in the winter tick, *Dermacentor albipictus*, collected from calf moose (New Hampshire, USA)

Citation:

Yoder, J. A., Rodell, B. M., Klever, L. A., Dobrotka, C. J., & Pekins, P. J. (2019). Vertical transmission of the entomopathogenic soil fungus *Scopulariopsis brevicaulis* as a contaminant of eggs in the winter tick, *Dermacentor albipictus*, collected from calf moose (New Hampshire, USA). *Mycology*, 10(3), 174-181.

Adult Health & Mortality

Determining cause-specific mortality of adult moose in northeast Minnesota, February 2013–July 2017

Citation:

Carstensen, M., Hildebrand, E. C., Plattner, D., Dexter, M., Jennelle, C., & Wright, R. G. (2015). Determining cause-specific mortality of adult moose in northeast Minnesota, February 2013–July 2017. *Summaries of Wildlife Research Findings*, 188-197.

Causes of non-hunting mortality of adult moose in Minnesota, 2013-2017

Citation:

Carstensen, M., Hildebrand, E. C., Plattner, D., Dexter, M., Wünschmann, A., & Armien, A. (2018). Causes of non-hunting mortality of adult moose in Minnesota, 2013-2017. *Department of Natural Resources*.

Necropsy findings in 62 opportunistically collected free-ranging moose (*Alces alces*) from Minnesota, USA (2003–13)

Citation:

Wünschmann, A., Armién, A. G., Butler, E., Schrage, M., Stromberg, B., Bender, J. B., ... & Carstensen, M. (2015). Necropsy findings in 62 opportunistically collected free-ranging moose (*Alces alces*) from Minnesota, USA (2003–13). *Journal of Wildlife Diseases*, 51(1), 157-165.

Analysis of age, body weight and antler spread of bull moose harvested in Maine, 1980-2009

Citation:

Andreozzi, H. A., Pekins, P. J., & Kantar, L. E. (2015). Analysis of age, body weight and antler spread of bull moose harvested in Maine, 1980-2009. *Alces: A Journal Devoted to the Biology and Management of Moose*, 51, 45-55.

A technique for deployment of rumen bolus transmitters in free-ranging moose (*Alces alces*)

Citation:

Minicucci, L., Carstensen, M., Crouse, J., Arnemo, J. M., & Evans, A. (2018). A technique for deployment of rumen bolus transmitters in free-ranging moose (*Alces alces*). *Journal of Zoo and Wildlife Medicine*, 49(1), 227-230.

Calf Health & Mortality

Assessing expandable Global Positioning System collars for moose neonates

Citation:

Obermoller, T. R., Delgiudice, G. D., & Severud, W. J. (2018). Assessing expandable Global Positioning System collars for moose neonates. *Wildlife Society Bulletin*, 42(2), 314-320.

Using GPS collars to determine parturition and cause-specific mortality of moose calves

Citation:

Severud, W. J., Giudice, G. D., Obermoller, T. R., Enright, T. A., Wright, R. G., & Forester, J. D. (2015). Using GPS collars to determine parturition and cause-specific mortality of moose calves. *Wildlife Society Bulletin*, 39(3), 616-625.

Maternal Behavior Indicates Survival and Cause-Specific Mortality of Moose Calves

Citation:

Obermoller, T. R., Delgiudice, G. D., & Severud, W. J. (2019). Maternal behavior indicates survival and cause-specific mortality of moose calves. *The Journal of Wildlife Management*, 83(4), 790-800.

Blood profiles and associated birth characteristics of free-ranging moose (Alces alces) neonates in a declining population in northeastern Minnesota

Citation:

DelGiudice, G. D., & Severud, W. J. (2016). Blood profiles and associated birth characteristics of free-ranging moose (Alces alces) neonates in a declining population in northeastern Minnesota. *Alces: A Journal Devoted to the Biology and Management of Moose*, 52, 85-99.

Fecundity and summer calf survival of moose during 3 successive years of winter tick epizootics

Citation:

Jones, H., Pekins, P. J., Kantar, L. E., O'Neil, M., & Ellingwood, D. (2017). Fecundity and summer calf survival of moose during 3 successive years of winter tick epizootics. *Alces: A Journal Devoted to the Biology and Management of Moose*, 53, 85-98.

Using snow urine samples to assess the impact of winter ticks on moose calf condition and survival

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Mortality assessment of moose (*Alces alces*) calves during successive years of winter tick (*Dermacentor albipictus*) epizootics in New Hampshire and Maine (USA)

Citation:

Jones, H., Pekins, P., Kantar, L., Sidor, I., Ellingwood, D., Lichtenwalner, A., & O'Neal, M. (2019). Mortality assessment of moose (*Alces alces*) calves during successive years of winter tick (*Dermacentor albipictus*) epizootics in New Hampshire and Maine (USA). *Canadian Journal of Zoology*, 97(1), 22-30.

Association of moose parturition and post-parturition habitat with calf survival

Citation:

Severud, W. J., DelGiudice, G. D., & Obermoller, T. R. (2019). Association of moose parturition and post-parturition habitat with calf survival. *The Journal of Wildlife Management*, 83(1), 175-183.

Survival and cause-specific mortality of moose calves in northeastern Minnesota

Citation:

Severud, W. J., Obermoller, T. R., Delgiudice, G. D., & Fieberg, J. R. (2019). Survival and cause-specific mortality of moose calves in northeastern Minnesota. *The Journal of Wildlife Management*, 83(5), 1131-1142.

Necropsy findings in 62 opportunistically collected free-ranging moose (*Alces alces*) from Minnesota, USA (2003–13)

Citation:

Wünschmann, A., Armién, A. G., Butler, E., Schrage, M., Stromberg, B., Bender, J. B., ... & Carstensen, M. (2015). Necropsy findings in 62 opportunistically collected free-ranging moose (*Alces alces*) from Minnesota, USA (2003–13). *Journal of Wildlife Diseases*, 51(1), 157-165.

Capture Induced Calf Abandonment

Monitoring movement behavior enhances recognition and understanding of capture-induced abandonment of moose neonates

Citation:

DelGiudice, G. D., Severud, W. J., Obermoller, T. R., & St-Louis, V. (2018). Gaining a deeper understanding of capture-induced abandonment of moose neonates. *The Journal of Wildlife Management*, 82(2), 287-298.

Minimizing mortality of moose neonates from capture-induced abandonment

Citation:

Severud, W. J., DelGiudice, G. D., & Obermoller, T. R. (2016). Minimizing mortality of moose neonates from capture-induced abandonment. *Alces: A Journal Devoted to the Biology and Management of Moose*, 52, 73-83.

Gaining a deeper understanding of capture-induced abandonment of moose neonates

Citation:

DelGiudice, G. D., Severud, W. J., Obermoller, T. R., & St-Louis, V. (2018). Gaining a deeper understanding of capture-induced abandonment of moose neonates. *The Journal of Wildlife Management*, 82(2), 287-298.

Internal Parasites

Cornell Wildlife Health Lab Meningeal Worm (*P. tenuis*) Fact Sheet

Evidence for transmission of the zoonotic apicomplexan parasite *Babesia duncani* by the tick *Dermacentor albipictus*

Citation:

Swei, A., O'Connor, K. E., Couper, L. I., Thekkiniath, J., Conrad, P. A., Padgett, K. A., ... & Shirkey, N. (2019). Evidence for transmission of the zoonotic apicomplexan parasite *Babesia duncani* by the tick *Dermacentor albipictus*. *International Journal for Parasitology*, 49(2), 95-103.

Using movement ecology to investigate meningeal worm risk in moose, *Alces alces*

Citation:

Ditmer, M. A., McGraw, A. M., Cornicelli, L., Forester, J. D., Mahoney, P. J., Moen, R. A., ... & Carstensen, M. (2020). Using movement ecology to investigate meningeal worm risk in moose, *Alces alces*. *Journal of Mammalogy*, 101(2), 589-603.

Development of a serological diagnostic assay for *Elaeophora schneideri* infection in moose (*Alces alces*)

Citation:

Miller, Megan D., "Development of a Serological Diagnostic assay for *Elaeophora schneideri* infection in moose (*Alces alces*). " Master's Thesis, University of Tennessee, 2019. https://trace.tennessee.edu/utk_gradthes/5424

Epidemiology of the lymphatic-dwelling filarioid nematode *Rumenfilaria andersoni* in free-ranging moose (*Alces alces*) and other cervids of North America

Citation

Grunenwald, C. M., Carstensen, M., Hildebrand, E., Elam, J., Laaksonen, S., Oksanen, A., & Gerhold, R. W. (2016). Epidemiology of the lymphatic-dwelling filarioid nematode *Rumenfilaria andersoni* in free-ranging moose (*Alces alces*) and other cervids of North America. *Parasites & Vectors*, *9*(1), 450.

Seroprevalence, isolation, first genetic characterization of *Toxoplasma gondii*, and possible congenital transmission in wild moose from Minnesota, USA

Citation:

Verma, S. K., Carstensen, M., Calero-Bernal, R., Moore, S. A., Jiang, T., Su, C., & Dubey, J. P. (2016). Seroprevalence, isolation, first genetic characterization of *Toxoplasma gondii*, and possible congenital transmission in wild moose from Minnesota, USA. *Parasitology Research*, *115*(2), 687-690.

Epidemiology of select species of filarial nematodes in free-ranging moose (*Alces alces*) of North America

Citation:

Grunenwald, Caroline Mae, "Epidemiology of select species of filarial nematodes in free-ranging moose (*Alces alces*) of North America. " PhD diss., University of Tennessee, 2015.
https://trace.tennessee.edu/utk_graddiss/3582

Emergence of the arterial worm *Elaeophora schneideri* in moose (*Alces alces*) and tabanid fly vectors in northeastern Minnesota, USA

Citation:

Grunenwald, C. M., Butler, E., Wünschmann, A., Armien, A. G., Carstensen, M., Hildebrand, E., ... & Gerhold, R. W. (2018). Emergence of the arterial worm *Elaeophora schneideri* in moose (*Alces alces*) and tabanid fly vectors in northeastern Minnesota, USA. *Parasites & Vectors*, *11*(1), 507.

Other Disease

Anti-brucella antibodies in moose (*Alces alces gigas*), muskoxen (*Ovibos moschatus*), and plains bison (*Bison bison bison*) in Alaska, USA

Citation:

Nymo, I. H., Beckmen, K., & Godfroid, J. (2016). Anti-brucella antibodies in moose (*Alces alces gigas*), muskoxen (*Ovibos moschatus*), and plains bison (*Bison bison bison*) in Alaska, USA. *Journal of Wildlife Diseases*, 52(1), 96-99.

Epidemiology of Bartonella infections in dogs and moose: animals as sentinels for human disease

Citation:

Vera, C. P. (2015). Epidemiology of Bartonella infections in dogs and moose: animals as sentinels for human disease. Doctoral Dissertation.

Climate, Habitat & Health

The effect of climate on population growth in a cold-adapted ungulate at its equatorial range limit

Citation:

Ruprecht, J. S., Koons, D. N., Hersey, K. R., Hobbs, N. T., & MacNulty, D. R. (2020). The effect of climate on population growth in a cold-adapted ungulate at its equatorial range limit. *Ecosphere*, 11(2), e03058.

Are Minnesota moose warming up to climate change? A validation of techniques for remotely monitoring moose behavior and body temperature.

Citation:

Herberg, Andrew. (2017). Are Minnesota moose warming up to climate change? A validation of techniques for remotely monitoring moose behavior and body temperature. Retrieved from the University of Minnesota Digital Conservancy, <http://hdl.handle.net/11299/188796>.

Climate warming is associated with smaller body size and shorter lifespans in moose near their southern range limit

Citation:

Hoy, S. R., Peterson, R. O., & Vucetich, J. A. (2018). Climate warming is associated with smaller body size and shorter lifespans in moose near their southern range limit. *Global Change Biology*, 24(6), 2488-2497.

Effects of climate and plant phenology on recruitment of moose at the southern extent of their range

Citation:

Monteith, K. L., Klaver, R. W., Hersey, K. R., Holland, A. A., Thomas, T. P., & Kauffman, M. J. (2015). Effects of climate and plant phenology on recruitment of moose at the southern extent of their range. *Oecologia*, 178(4), 1137-1148.

Range expansion of moose in Arctic Alaska linked to warming and increased shrub habitat

Citation:

Tape, K. D., Gustine, D. D., Ruess, R. W., Adams, L. G., & Clark, J. A. (2016). Range expansion of moose in Arctic Alaska linked to warming and increased shrub habitat. *PloS One*, 11(4).

Body temperature patterns vary with day, season, and body condition of moose (*Alces alces*)

Citation:

Thompson, D. P., Barboza, P. S., Crouse, J. A., McDonough, T. J., Badajos, O. H., & Herberg, A. M. (2019). Body temperature patterns vary with day, season, and body condition of moose (*Alces alces*). *Journal of Mammalogy*, 100(5), 1466-1478.

Climate change effects on deer and moose in the midwest

Citation:

Weiskopf, S. R., Ledee, O. E., & Thompson, L. M. (2019). Climate change effects on deer and moose in the midwest. *The Journal of Wildlife Management*, 83(4), 769-781.

Range expansion in unfavorable environments through behavioral responses to microclimatic conditions: Moose (*Alces americanus*) as the model

Citation:

Wattles, D. W., Zeller, K. A., & DeStefano, S. (2018). Range expansion in unfavorable environments through behavioral responses to microclimatic conditions: Moose (*Alces americanus*) as the model. *Mammalian Biology*, 93(1), 189-197.

Evaluating the effects of habitat condition, climate and predator density on Shiras moose demography

Citation:

Oates, B., Monteith, K., Merkle, J., Fralick, G., Courtemanch, A. B., Smith, D., ... & Kauffman, M. (2016). Evaluating the effects of habitat condition, climate and predator density on Shiras moose demography. *PeerJ Preprints*; 2016. DOI: 10.7287/peerj.preprints.2056v1.

Movement modeling reveals the complex nature of the response of moose to ambient temperatures during summer

Citation:

Montgomery, R. A., Redilla, K. M., Moll, R. J., Van Moorter, B., Rolandsen, C. M., Millspaugh, J. J., & Solberg, E. J. (2019). Movement modeling reveals the complex nature of the response of moose to ambient temperatures during summer. *Journal of Mammalogy*, 100(1), 169-177.

Reproduction in moose at their southern range limit

Citation:

Ruprecht, J. S., Hersey, K. R., Hafen, K., Monteith, K. L., DeCesare, N. J., Kauffman, M. J., & MacNulty, D. R. (2016). Reproduction in moose at their southern range limit. *Journal of Mammalogy*, 97(5), 1355-1365.

The effect of thermoregulation and roads on the movements and habitat selection of moose in Massachusetts

Citation:

Wattles, David W., "The effect of thermoregulation and roads on the movements and habitat selection of moose in Massachusetts" (2015). *Doctoral Dissertations*. 333.

Moose–motor vehicle collision: A continuing hazard in northern New England

Citation:

Clark, D. E., Fulton, G., Ontengco, J. B., Lachance, T., & Sutton Jr, J. E. (2019). Moose–Motor Vehicle Collision: A Continuing Hazard in Northern New England. *Journal of the American College of Surgeons*, 228(6), 941-947.

Winter nutritional restriction and decline of moose in Northeastern Minnesota, winters 2013-2018

Citation:

DelGiudice, G. D., Severud, W. J., Obermoller, T. R., & Smith, B. D. WINTER NUTRITIONAL RESTRICTION AND DECLINE OF MOOSE IN NORTHEASTERN MINNESOTA, WINTERS 2013–2018. Minnesota DNR.

Age-related antler characteristics in an intensively managed and nutritionally stressed moose population

Citation:

Young Jr, D. D., & Boertje, R. D. (2018). Age-related antler characteristics in an intensively managed and nutritionally stressed moose population. *Alces: A Journal Devoted to the Biology and Management of Moose*, 54, 37-44.

Bed sites as thermal refuges for a cold-adapted ungulate in summer

Citation:

McCann, N. P., Moen, R. A., Windels, S. K., & Harris, T. R. (2016). Bed sites as thermal refuges for a cold-adapted ungulate in summer. *Wildlife Biology*, 22(5), 228-237.

The demography and determinants of population growth in Utah moose (*Alces alces shirasi*)

Citation:

Ruprecht, Joel S., "The Demography and Determinants of Population Growth in Utah Moose (*Alces alces shirasi*)" (2016). *All Graduate Theses and Dissertations*. 4723.
<https://digitalcommons.usu.edu/etd/4723>

Stress

Large-scale spatial variation of chronic stress signals in moose

Citation:

Spong, G., Gould, N. P., Sahlén, E., Cromsigt, J. P., Kindberg, J., & DePerno, C. S. (2020). Large-scale spatial variation of chronic stress signals in moose. *Plos One*, 15(1), e0225990.

Hair cortisol concentration and body mass in moose (*Alces alces*) infested with deer keds (*Lipoptena cervi*)

Citation:

Madslie, K., Stubbsjøen, S. M., Viljugrein, H., Ytremhus, B., Solberg, E. J., Kapronczai, L., ... & Cattet, M. (2020). Hair Cortisol Concentration and Body Mass in Moose (*Alces alces*) Infested with Deer Keds (*Lipoptena cervi*). *Journal of Wildlife Diseases*.

Acute thermal and stress response in moose to chemical immobilization

Citation:

Thompson, D. P., Crouse, J. A., McDonough, T. J., Barboza, P. S., & Jaques, S. (2020). Acute Thermal and Stress Response in Moose to Chemical Immobilization. *The Journal of Wildlife Management*. Published as Early View.