



THE WILDLIFE SOCIETY



NUTRITIONAL ECOLOGY WORKING GROUP

Message from the Chair

It has been another busy year for the Nutritional Ecology Working Group! Our membership continues to remain stable, fluctuating around 110 members, with a large contingent of students (25%) and early career professionals (15%) in our ranks. It is encouraging to see interest in nutritional ecology from students and early career professionals, and I believe the Nutritional Ecology Working Group's commitment to provide resources (workshops, symposiums, webinars, graduate student discussion group, travel grants) has benefited the next cohort of nutritional ecologists. It is exciting to see this new cohort of nutritional ecologists moving into agencies, non-profits and academia, and incorporating nutritional ecology into management and research at many levels. This summer, the Nutritional Ecology Working Group completed our third, 3-day skills workshop, "Measuring Forage Quantity and Quality for Herbivores" in Palmer, Alaska. The Nutritional Ecology Working Group provided three \$500 travel grants to students for this workshop. This workshop has been the main fundraising source for our working group, and I would like to thank this year's workshop organizers, Rachel Cook, David Hewitt, Ryan Long, Lisa Shipley, Don Spalinger, Kristin Denryter, for another great workshop!

The Nutritional Ecology Working Group held our annual meeting at The Wildlife Society's 32nd annual conference held in Edmonton, Alberta, earlier this autumn. Our working group provided \$2000 total for 3 travel grants for students to attend and present at the conference this year. Additionally, the Nutritional Ecology Working Group sponsored a symposium at the annual conference titled "Integration of nutrition into on-the-ground management: Potential and challenges". Thank you to our members Marcus Blum, Rachel Cook, Jocelyn Byro, Cody Schroeder, and Jacob Dykes, who helped put this symposium together, as well as the invited speakers that made it happen. Invited speakers who provided a recorded talk of their presentation are available on our website at <https://wildlife.org/newg/symposium/>.

Members of our webinar committee (Scott McWilliams, Tamara Johnstone-Yellen, Keith Oster, Marcus Blum) have put together a great lineup for our sixth winter webinar series. These webinars are a great way to bring together a diverse set of speakers on nutritional ecology, and all webinars are recorded and available to watch on our website <https://wildlife.org/newg/webinar-series/>.

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The graduate student discussion group, led by Jocelyn Biro, continues to meet and provide feedback to the Nutritional Ecology Working Group board. Through this discussion group, graduate students requested a method for asking questions about nutritional ecology. The board is currently working on a question submission link in Google Forms to provide an avenue for graduate students, or any other Nutritional Ecology Working Group member, to submit questions regarding nutritional ecology. The board will then facilitate answering the questions from members who have expertise in that area, and the question and answer will then be provided in a living Google document that our members can access.

This autumn, the Nutritional Ecology Working Group completed elections for chair elect, treasurer, at large board members, outreach coordinator, and newsletter editor. I would like to welcome to the board Kristin Denryter (chair-elect), Ryan Martin (treasurer), Benjamin Padilla (board member), Garrett Savory (board member) Bryan Spencer (newsletter editor), and returning board members Rachel Cook (board member), Colter Chitwood (board member), Jocelyn Biro (board member), Levi Heffelfinger (board member), and Yasaman Shakeri (outreach coordinator). The Nutritional Ecology Working Group board also increased our at large board member positions by 1, creating a graduate student at large board position ensuring that we will always have a student on our board. I would like to thank outgoing treasurer Britanny Wagler, newsletter editor Mary Hiney and at large board member Jacob Dykes for their efforts on the board for the last 2 years.

I look forward to seeing many of you at our upcoming webinars this winter, and if you are interested in becoming more involved in any aspect of the Nutritional Ecology Working Group, please don't hesitate to reach out to myself or one of the board members.

Dan Thompson
Chair, Nutritional Ecology Working Group

EXECUTIVE BOARD

Chair - Dan Thompson

Chair-elect - Kristin Denryter

Past chair - Marcus Blum

Secretary - Kately Huggler

Treasurer - Ryan Martin

Outreach - Yasaman Shakeri

Board members at large

- Rachel Cook

- Colter Chitwood

- Levi Heffelfinger

- Jocelyn Biro

- Garrett Savory

- Benjamin Padilla

Newsletter editor - Bryan Spencer

Upcoming Meetings

2025 Northern Wild Sheep and Goat Council Symposium

The Northern Wild Sheep and Goat Council created its symposium to promote wild sheep and mountain goat conservation by sharing research, management practices, and expert guidance.

Elko, NV
June 15, 2026 - June 18, 2026

January 2026 - 1st call for papers

NEWG 2025-2026 Webinar Series

The Nutritional Ecology Working Group is excited to continue our annual webinar series, highlighting a broad spectrum of applied nutritional research across taxa from a diverse set of speakers.

12 pm Mountain Standard Time

December 10th, 2025

Ryan Long – University of Idaho

“A nutritional approach to resource selection modeling: capturing the behavior-performance connection”

January 14th, 2026

Brock McMillan – Brigham Young University

“The role of nutritional condition in mule deer ecology”

February 11th, 2026

Bart Ballard – Texas A&M University – Kingsville

“Nutrition, movements, and conservation of the northern pintail in Texas and beyond”

March 11th, 2026

Cynthia Downs – SUNY College of Environmental Science and Forestry

“Macronutrient correlates of immune defenses in free-living ungulates”

A zoom link will be emailed out a week prior to each webinar. To be added to the email list, please send an email tws.nutritional.ecology@gmail.com. To access recordings of past webinars, please visit the Nutritional Ecology Working Group’s webinar page <https://wildlife.org/newg/webinar-series/>.

Plants to Populations:
Predicting diet quality and
nutrient intake of deer from
forage metrics

Lisa Shipley, Washington State University
Iver Hull, Idaho Department of Fish and Game
Amy Ulappa, Boise State University

Lucas Rouse

XOCHITL MONDR...

Eddie Bruce

Annual TWS Conference Symposium

Integration of Nutrition into On-The-Ground Management: Potential and Challenges

The Nutritional Ecology Working Group (NEWG) of The Wildlife Society recently hosted a highly successful symposium at the 2025 TWS Annual Conference in Edmonton, Alberta, titled “Integration of Nutrition Into On-The-Ground Management: Potential and Challenges.” The session featured ten speakers presenting a diverse range of applied studies that demonstrated how nutritional ecology informs wildlife management across species and systems. Talks covered topics on white-winged doves, wild turkeys, sandhill cranes, moose, grizzly bears, polar bears, white-tailed deer, mule deer, and elk, illustrating the breadth of current nutritional research in wildlife conservation and management.



The symposium drew strong attendance throughout, with as many as 57 participants engaged during peak sessions. Attendees provided excellent feedback and contributed to dynamic discussions both during and after the presentations—evidence of the growing interest in applying nutritional principles to real-world management. The Nutritional Ecology Working Group extends sincere appreciation to all speakers, moderators, and organizing committee members whose efforts made this event possible. The enthusiasm and participation from the TWS community highlights the increasing recognition of nutrition as a foundational component of effective wildlife management.

Marcus Blum
Past Chair



Third NEWG Skills Workshop



The third NEWG skills workshop, devoted to Measuring Forage Quality and Quantity for Herbivores, was held at the UAF Matanuska Experiment Farm and Extension Center in Palmer Alaska during June 2025. Instructors/organizers for the workshop included Rachel Cook (NCASI), Kristin Dentyer (ADFG), David Hewitt (CKWRI), Ryan Long (Idaho), Lisa Shipley (WSU), Don Spalinger (UAlaska), Clare McArthur (USydney), and Deborah Monzingo (IDFG). Nelson Crone and Melissa Coston-Clampitt (both of UAF) helped make sure the workshop ran smoothly and Patience Mateer (Idaho) handled all the registration details. We are also grateful to 3 sponsors for this workshop: ADFG (paid for classroom rental fees, lab and field supplies, personnel time), CKWRI (paid for a portion of D. Hewitt's travel expenses), and NCASI (paid for R. Cook's travel expenses).

Attendees of the main 3-day workshop (23 total) included a mix of graduate students, agency biologists, land managers, animal caretakers, a vet student, and a professor from 5 states (Alaska, California, Idaho, Mississippi, and Wyoming), and 3 provinces/territories (British Columbia, Alberta, and Yukon). The main workshop consisted of a series of interrelated lectures, field exercises (hands-on techniques for quantifying forage biomass and quality), lab and computer exercises, problem-solving sessions (e.g., identifying data issues, experimental design), and case studies showing how the techniques have been used to address management/research questions. The optional half day had 17 attendees. We used tame caribou and feeding trials to offer a hands-on demonstration of relationships among plant traits, foraging behavior, diet selection and nutrient intake. In addition, we explored the ability of commonly used surrogates of nutrition (e.g., remotely sensed metrics) to quantify variation in forage characteristics at broad scales. Kristin Denryter and Doug Beattie did an amazing job preparing the caribou and setting up the foraging trials, and attendees really enjoyed these exercises.



We are currently in the process of planning for our next workshop in 2027; location and date to be determined. If you have any questions, please contact Rachel Cook (rachierae@gmail.com).



Skills Workshop Scholarship Winners

Becky Barbier



My name is Becky Barbier, and I am a first-year graduate student in the Monteith Shop at the University of Wyoming. As a graduate student evaluating the efficacy of a treatment designed to enhance moose forage, attending the NEWG Measuring Forage Quantity and Quality for Herbivores workshop provided a highly valuable opportunity. By offering an in-depth understanding of key methodologies that I am directly applying in my project, this workshop strengthened my ability to collect, interpret, and analyze nutritional ecology data. The course presentations paired with the hands-on field experience, have prepared me to conduct my research with greater confidence and accuracy. Additionally, through discussions with like-minded students and experts in this field, I was able to learn, network, and ask many questions specific to my project.

Experiencing beautiful Palmer, Alaska, and its incredible wildlife was truly special. I stayed in an Airbnb with other graduate students from universities across the United States and Canada, and together we rented a car to explore the area. Building these connections while learning alongside peers with similar interests helped jumpstart my graduate career. This experience not only deepened my passion for wildlife research but also created memories and professional relationships that I will carry with me throughout my career.

Alejandro Ramos Hurtado

Thanks to the travel grant awarded to me by the Nutritional Ecology Working Group, I was able to attend the 2025 skills workshop and learn about forage quality analysis and the sampling process. My research in the upcoming years will focus on mule deer and bighorn sheep, and as a PhD student early in my program, it was invaluable to learn the ins and outs of designing a project, choosing the best methods, and executing the sampling process in the field.

The workshop instructors included experts in forage analysis spanning a wide range of taxonomic groups. It was especially helpful to be able to ask questions in real time and hear the instructors' detailed responses. I also benefited a lot from connecting with other attendees who are using the same methodology.

As I begin preparing for my thesis proposal and outlining my ideas, everything feels much clearer now that I've seen these methods demonstrated and had hands-on training. Since attending the workshop, I've also been able to develop a few smaller projects to test out the techniques I learned within my study system. I hope to become very familiar with forage quality analysis so I can apply this skillset to local conservation issues. I am truly grateful to the committee for facilitating this learning experience for me.



Gabriela Peralta



Attending the NEWG Forage Quality and Quantity Workshop in Palmer, Alaska was an incredibly enriching experience that deepened my understanding of applied nutrition beyond what I anticipated. The course was well structured and led by passionate instructors who presented complex material clearly, making it accessible even for those like me with limited lab experience. Their teaching built both my confidence and competence in forage assessment and nutritional analysis.

One of the most rewarding aspects was the camaraderie that formed among participants. Group projects encouraged communication and problem-solving, helping us learn from one another and build meaningful connections. The diversity of research and professional backgrounds broadened my perspective on how nutrition is applied across fields, and the willingness of others to share guidance highlighted the workshop's strong culture of mentorship.

The field and lab components were especially impactful. Before attending, I had little hands-on experience with feed evaluation or nutrient analysis, yet the step-by-step instruction made each skill approachable. Collecting samples, processing them in the lab, and interpreting the results offered a complete look at forage evaluation and illustrated the real-world challenges of diet formulation.

Being in Alaska added even greater significance. Experiencing firsthand the landscapes that support northern herbivores reinforced why nutrition matters so deeply in both domestic and wild systems. The workshop continues to influence my MSc research on Caribbean King Crab nutrition at Ross University School of Veterinary Medicine, shaping how I think about diet development, nutrient composition, and animal performance. It provided not only practical knowledge but also mentorship, inspiration, and a renewed sense of purpose as I continue toward a career in veterinary medicine.

TWS Travel Award Winners

Miranda Hopper



This semester, I was fortunate to receive the Nutritional Ecology Working Group (NEWG) Travel Scholarship for my trip to Edmonton, Canada for the national meeting of The Wildlife Society. At the conference, I presented my research on resource partitioning and competition between native and non-native ungulates in the Texas Hill Country.

I was also able to network with other graduate students and make connections with professors that I have wanted to meet for a long time. Additionally, I was able to attend the NEWG meeting and learn more about NEWG and all the great opportunities and projects coming from this group!

This scholarship was extremely helpful in covering the costs of flights, lodging, and meals, and it got me to Canada for the first time! I am really grateful for this opportunity, and I'm looking forward to continuing to work with NEWG and the rest of the national chapter in the future!

Chloe Delahoussaye

As one of the undergraduate students who received a TWS Travel Grant from the Nutritional Ecology Working Group, I am more than thankful for receiving this grant. As a senior graduating from Tarleton State University in December, this last trip to Canada meant the world to me. I was able to present my research on the site use of waterfowl in North-Central Texas and had the opportunity to receive feedback and learn through other research presentations on how I could improve my own project. I spent most of my time weaving through different presentations and trying to talk to as many different people from all aspects of the field. Many of those people I recognized in the NEWG meeting held at the conference center. Although my knowledge of nutritional ecology is surface-level, it was very welcoming to see those in the group speak so passionately about it. The working group's grant allowed me to attend one last conference where I was able to network with professionals, form research ideas through presentations, and create memories that I will carry for the rest of my days. Words cannot describe how thankful I am, and I look forward to getting more involved in the working group!



Joseph Hediger



Thank you to the Nutritional Ecology Working Group for the opportunity to attend the Wildlife Society Conference in Alberta. My conference week started off with the field trip to Elk Island National Park. This trip was a great opportunity to meet fellow students, academics, and consultants in a relaxed, fun environment. Our group observed bison, toured the bison handling facility, and enjoyed sightings of snow geese and a variety of other species. The crisp air and sunshine set the stage for the week ahead.

The scientific program was diverse, well organized, and engaging. During the climate change session each speaker built naturally upon the previous one, creating a cohesive narrative. I also found the symposium on broadening perspectives within rangeland and wildlife management especially impactful and enlightening.

The symposium on prescribed fire was another highlight, offering a look into cutting-edge science and new findings shaping fire ecology and management. Throughout the week, I was impressed by how thoughtfully presenters integrated Indigenous knowledge alongside Western science. The final session on Indigenous engagement offered practical guidance on how researchers can respectfully incorporate Indigenous knowledge into their research questions.

Overall, the conference offered plenty of opportunities for networking and education. I left feeling motivated and grateful for the chance to engage with such a great community of wildlife professionals and look forward to TWS 2026 in Iowa!

Recently Published Literature

The list of recent publications provided is for informational purposes only and inclusion on the list should not be considered endorsement by NEWG.

- Anton, C. B., N. J. DeCesare, and C. J. Peterson. 2025. Distance, weather, and forage conditions drive timing of autumn migration in female mule deer. *Movement Ecology* 13:10.
- Balluffi-Fry, J., L. Shipley, R. T. Zijlstra, E. W. Bork, M. Humphries, and S. Boutin. 2025. Nutrient balancing by a wild browsing herbivore: Nutritional geometry of snowshoe hares (*Lepus americanus*). *Ecology and Evolution* 15:e72347.
- Brown, C. L., R. M. Nielson, D. Clark, R. Kennedy, K. Loonam, M. M. Rowland, and M. J. Wisdom. 2025. Drought-linked resource limitations on the body condition of a large ungulate. *Frontiers in Ecology and Evolution* 13.
- Buchanan, C. E., S. J. Galla, J. Studyvin, J. D. Lautenbach, J. D. Scasta, G. D. Randolph, J. S. Forbey, and J. L. Beck. 2025. Free-roaming horse diet and body condition differences across seasons and ecologically diverse herd management areas. *Rangeland Ecology & Management* 103:230–246.
- Davis, N. G., S. A. Wyffels, D. Damiran, E. Darambazar, M. Vavra, R. A. Riggs, and T. DelCurto. 2025. Nutritional dynamics of plant growth forms in a forest-grassland mosaic. *Rangeland Ecology & Management* 101:117–125.
- DeMoranville, K. J., W. Carter, C. Cooper-Mullin, L. Corcoran, B. J. Pierce, and S. R. McWilliams. 2025. Flying stimulates the antioxidant system and protects against oxidative damage in a migratory songbird, yet diet quality has little effect. *Journal of Avian Biology* 2025:e03379.
- Denryter, K., T. R. Stephenson, and K. L. Monteith. 2025. Evaluating assumptions about gross energy in estimating nutritional value of forage: a case study using forages of Sierra Nevada bighorn sheep. *California Fish and Wildlife Journal* 111.
- Finn, W. C., T. J. McGreevy Jr, B. C. Tefft, T. P. Husband, W. A. Carter, and S. R. McWilliams. 2025. Plant constituent predictors in the winter diet selection of the imperiled New England Cottontail (*Sylvilagus transitionalis*). *Journal of Mammalogy* 106:1234–1245.
- Harper, C. A., B. K. Strickland, M. A. Lashley, M. A. Turner, J. S. Nanney, M. Colter Chitwood, C. E. Moorman, N. Ellison-Neary, J. M. Brooke, and G. M. Street. 2025. Soil quality does not predict plant nutrition available to white-tailed deer. *The Journal of Wildlife Management* e22722.
- Huggler, K. S., R. A. Smiley, B. L. Wagler, A. B. Courtemanch, Z. Gregory, K. L. Monteith, L. A. Shipley, C. Stewart, P. Wik, E. F. Cassirer, and R. A. Long. 2025. Should I stay or should I go? Causes and consequences of intraspecific variation in site fidelity. *Movement Ecology* 13:80.
- Johnson, H. E., G. L. Coulombe, L. G. Adams, C. Arnison, P. Barboza, M. Kienzler, W. B. Leacock, and M. J. Suitor. 2025. DNA metabarcoding and video camera collars yield different inferences about the summer diet of an arctic ungulate. *Ecosphere* 16.
- Kamenova, S., S. D. Albon, L. E. Loe, R. J. Irvine, R. Langvatn, G. Gusarova, E. J. De Muinck, and P. Trosvik. 2025. Arctic greening drives changes in the diet and gut microbiome of a large herbivore with consequences for body mass. *Ecology and Evolution* 15:e71731.
- LaSharr, T. N., S. P. H. Dwinnell, R. P. Jakopak, R. T. Rafferty, J. Randall, C. Stewart, R. Kaiser, M. Thonhoff, B. Scurlock, T. Fieseler, G. Fralick, and K. L. Monteith. 2025. Nutrition regulates reproductive senescence and terminal investment across the reproductive cycle of a long-lived mammal. *Scientific Reports* 15:4888.

- Manlick, P. J., M. Howe, J. Wen, J. C. Barnard, and K. N. Nelson. 2025. Thinning restores ungulate foraging habitat in historically logged forests. *Ecological Applications* 35.
- Martin, M. E., S. M. Matthews, S. L. Stock, H. L. Mackey, M. A. McDonald, D. Garrison, T. R. Smith, A. M. Townsend, J. Hartman, B. Heath Smith, S. L. Vanderzwan, T. Levi, and B. N. Sacks. 2025. Landscape heterogeneity shapes the spatial and diet partitioning of a montane carnivore guild. *Oikos* e11223.
- Ortega, A. C., K. L. Monteith, B. Wise, and M. J. Kauffman. 2025. Do mule deer surf peaks in forage quality while on summer range? *Ecology* 106:e70068.
- Rafferty, R. T., T. N. LaSharr, R. P. Jakopak, S. P. H. Dwinnell, J. Randall, R. C. Kaiser, M. Thonhoff, B. Scurlock, T. Fieseler, and K. L. Monteith. 2025. State-dependent mortality, not behavior, fragments population distribution of a long-lived mammal after ecological disturbance. *Landscape Ecology* 40:15.
- Simmonds, M., S. Hamel, J. Henden, K. Langeland, A. Stien, T. Tveraa, and N. G. Yoccoz. 2025. Disentangling seasonal effects of environmental variability and population density on life-history traits in a capital breeder. *Journal of Animal Ecology* 1365-2656.70048.
- White, K. S., T. Levi, E. Hood, and C. T. Darimont. 2025. Life-history trade-offs and environmental variability shape reproductive demography in a mountain ungulate. *Journal of Animal Ecology* 1–17.
- Wiseman, M. A., K. L. Monteith, and R. A. Long. 2025. Causes and consequences of individual variation: Linking state-dependent life histories to population performance. *Ecosphere* 16:e70230.