

NUTRITIONAL ECOLOGY WORKING GROUP

SPRING 2022 NEWSLETTER

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Hello everyone,

The new board of the Nutritional Ecology Working Group took office in November 2021 and we had our first meeting in January 2022. Many of our seasoned board members volunteered to stay on for another term, but we also were joined by many new faces including Marcus Blum (Utah State University, Secretary), Yasaman Shakeri (University of Wyoming, Newsletter Editor), and Colter Chitwood (Oklahoma State University, Board Member). We also are pleased to announce that Melia Devivo (Washington Department of Fish and Wildlife) recently volunteered to serve as a liaison between the Nutritional Ecology Working Group and the TWS Diversity, Equity, and Inclusion Network. Please reach out to welcome these members to our leadership team and share with them any ideas you have to help the NEWG continue working toward its mission.

We have several events planned for 2022, including the last presentation of our winter webinar series in March and our semi-annual meeting in April. Both of those are virtual events with additional information provided elsewhere in the newsletter. We also have a technical committee working on a symposium for the TWS meeting in Spokane, Washington, in November of this year. The proposed symposium aims to help scientists understand the strengths and limitations of classic and new methods for diet determination including video collars, DNA metabarcoding, and stable isotopes, among others. We're still in the process of finding speakers and preparing the proposal for submission and hope to share an agenda soon.

Lastly, we will soon be looking for a new nominations committee and for a new Chair (and a Chair-elect) to take the helm when my term ends in November and I transition to the position of Past Chair. I know that many individuals who would be interested in the Chair position are concerned about the workload, but we have taken several steps to help disperse and reduce the workload over the last year. Further, the new Chair is supported by the great team of folks we have on the board and various committees who are quite independent. The new Chair also will have support in the form of the Past Chair position, which will be a NEWG first. If you are interested in helping on the nominations committee or running for Chair in autumn 2022, or know someone who might be, please reach out to me via email and I'd be happy to share additional information.

Kristin Denryter
Chair, Nutritional Ecology Working Group

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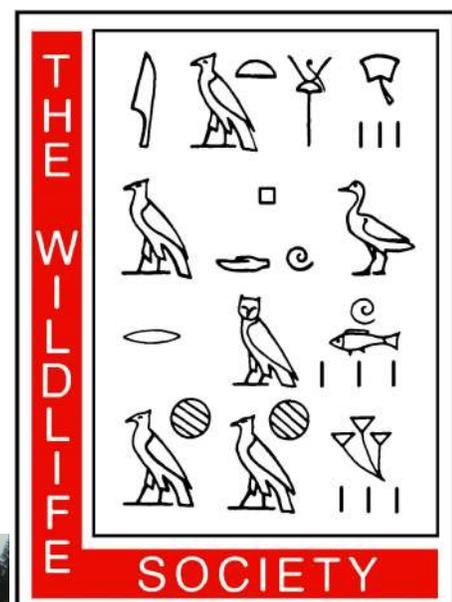


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ANNOUNCEMENTS & UPCOMING EVENTS

SEMI-ANNUAL MEETING

Our semi-annual meeting will be held at 12 pm MT on Wednesday, April 13, 2022. The Zoom link for the meeting is:

<https://us06web.zoom.us/j/81201390454?pwd=a1JDdDluOENMcmpTSIBOMFAyZzMzdz09>

PROPOSED SYMPOSIUM FOR TWS 2022

The foods animals eat are of interest to wildlife managers and researchers, but in many cases, efforts to quantify diet composition have been stymied by methodological limitations. Recent advances in methods for determining diet composition promise to improve our understanding of how much of each dietary item animals are eating, but may not be applicable universally and each method has its own strengths and limitations. In this symposium, we aim to bring together speakers with expertise in a variety of methods for determining diet composition to share their experiences (successes and failures) in trying to apply these methods to study wildlife diets across a variety of ecological settings and taxa.



The goal of the symposium is to provide attendees with a comprehensive overview of the state of the science for wildlife diet composition methods, including an introduction to diet composition and selection, classic and new methods, and case studies that demonstrate the relevance of diet composition to management and conservation. We hope attendees will take away important insights into many of the available methods and considerations for which may be most appropriate to their research questions. Check the website for periodic updates.

NUTRITIONAL ECOLOGY WEBINAR SERIES!

The Wildlife Society's Nutritional Ecology Working Group webinar series is well underway for the 2021-2022 session under the theme of "the digestive biome and the influence of these organism on nutrition and condition of wildlife." So far, we've heard from 4 speakers on a wide range of topics exploring the interplay of habitats, microbiota, and their hosts and how those interactions effect the condition, productivity and even the fertility of vertebrate populations. We welcome you to join us for our final webinar of the year on March 9 for a talk from Dr. Sue Ishaq titled "Moose Rumen Microbes and You" where she will share some of her previous work on the gut microbiome of moose and how wild and captive animals can help us understand animal microbiomes. For more information about webinar series or to view past presentations please visit our website at <https://wildlife.org/newg/webinar-series/>.

If you're interested in presenting during next year's webinar series, have suggestions for a topic/presenter, or would like more information, please contact Keith Oster at keith.oster@alaska.gov



LAB ANALYSES FOR NUTRITION WORK

We are still looking for tips and suggestions for our comprehensive list of analyses for nutrition work! We are close to finishing our preliminary list of laboratories in the USA and Canada that offer *in vitro* digestibility assays, bomb calorimetry and sequential fiber analysis, tannin precipitation, etc. and provide a key to help you determine which assays you need and which labs can perform those assays.

If you have some good tips on where you've sent forage samples, please email us at tw.nutritional.ecology@gmail.com and we'll add them to our list.

Right: Sampling forage quality at Starkey Experimental Forest and Range. Photo: Jennifer Merems.



NEWG Journal Discussion Group

The working group has started a discussion group for students and new professionals interested in improving their understanding of nutritional ecology, including the foundational papers and theories that have helped build the field as well as emerging technologies and techniques. Our discussions have included DNA metabarcoding as a diet analysis method and properly linking plant chemistry to population regulation. For our meeting in March, we will be joined by Dr. Khrys Duddleston of the University of Alaska Anchorage to discuss her work on diet influencing urea recycling and the gut microbiome of arctic ground squirrels. The date is still TBD so keep an eye on your inbox! For more information, email tw.nutritional.ecology@gmail.com



RECENT AND RELEVANT LITERATURE

- Cook, R.C., J.A. Crouse, J.C. Cook, and T.R. Stephenson. 2021. Evaluating indices of nutritional condition for caribou (*Rangifer tarandus*): which are the most valuable and why? *Canadian Journal of Zoology* 99:596-613.
- Cook, R.C., J. Oyster, K. Mansfield, and R.B. Harris. 2021. Evidence of summer nutritional limitations in a northeastern Washington moose population. *Alces* 57:23-46.
- Cook, J.G., A.P. Kelly, R.C. Cook, B. Culling, D. Culling, A. McLaren, N. C. Larter, and M. Watters. 2021. Seasonal patterns in nutritional condition of woodland caribou (*Rangifer tarandus*) in the southern Northwest Territories and northeastern British Columbia. *Canadian Journal of Zoology* 99:845-858.
- Denryter, K., R.C. Cook, J.G. Cook, and K.L. Parker. 2021. Animal-defined resources reveal nutritional inadequacies for woodland caribou during summer in northeastern British Columbia. *Journal of Wildlife Management* <https://doi.org/10.1002/jwmg.22161>
- Gowda, J. H., M. Blackhall, L. A. Shipley, T. Kitzberger, and F. Tiribelli, 2022. Are digestibility and flammability related? Two variables shaping landscape dynamics of Northwestern Patagonian forests. *Forest Ecology and Management* 503:119810. <https://doi.org/10.1016/j.foreco.2021.119810>
- Harris, R.B., J.G. Goerz, J. Oyster, R.C. Cook, K. Mansfield, M. Atamian, C. Lowe, A. Prince, and B.Y. Turnock. 2021. Bottom-up and top-down factors contribute to reversing a moose population increase in northeastern Washington. *Alces* 57:47-69.
- Findeisen, E., Südekum, K. H., Fritz, J., Hummel, J., & Clauss, M. (2021). Increasing food intake affects digesta retention, digestibility and gut fill but not chewing efficiency in domestic rabbits (*Oryctolagus cuniculus*). *Journal of Experimental Zoology Part A: Ecological and Integrative Physiology*, 335(7), 614-622.
- Findlay, L. J., & Hill, R. A. (2021). Baboon and vervet monkey crop-foraging behaviors on a commercial South African farm: Preliminary implications for damage mitigation. *Human–Wildlife Interactions*, 14(3), 19.
- Hayes, Teagan A., et al. "Trade-offs in forest disturbance management for plant communities and ungulates." *Forest Ecology and Management* 506 (2022): 119972.

Konôpka, B., V. Šebeň, J. Pajtík, and L. A. Shipley. 2021. Excluding large wild herbivores reduced Norway spruce dominance and supported tree species richness in a young, naturally regenerated stand. *Forests* 12, 737, <https://doi.org/10.3390/f12060737>.

Molter, C. M., Norton, T. M., Hoopes, L. A., Nelson Jr, S. E., Kaylor, M., Hupp, A., ... & Page-Karjian, A. (2022). Health and nutrition of loggerhead sea turtles (*Caretta caretta*) in the southeastern United States. *Journal of Animal Physiology and Animal Nutrition*, 106 (1), 205-219.

O'Rourke, D. R., Mangan, M. T., Mangan, K. E., Bokulich, N. A., MacManes, M. D., & Foster, J. T. (2021). Lord of the Diptera (and moths and a spider): Molecular diet analyses and foraging ecology of Indiana bats in illinois. *Frontiers in Ecology and Evolution*, 9, 12.

Robb*, B., P. J. Olsoy*, J. J. Mitchell, T. T. Caughlin*, D. M. Delparte, M. R. Fremgen-Tarantino, J. D. Nobler*, J. L. Rachlow, L. A. Shipley, and J. S. Forbey. 2021. Near-infrared spectroscopy aids ecological restoration by classifying variation of taxonomy and phenology of a native shrub. *Restoration Ecology*, doi: 10.1111/rec.13584.

Schultz, H., Chang, K., Bury, S. J., Gaskett, A. C., Dennis, T. E., Ismar-Rebitz, S. M., ... & Millar, C. D. (2021). Sex-specific foraging of an apex predator puts females at risk of human–wildlife conflict. *Journal of Animal Ecology*, 90(7), 1776-1786.

Staudenmaier, A. R., Shipley, L. A., Camp, M. J., Forbey, J. S., Hagerman, A. E., Brandt, A. E., & Thornton, D. H. (2022). Mule deer do more with less: comparing their nutritional requirements and tolerances with white-tailed deer. *Journal of Mammalogy*, 103(1), 178-195.

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Sweeny, A. R., Clerc, M., Pontifes, P. A., Venkatesan, S., Babayan, S. A., & Pedersen, A. B. (2021). Supplemented nutrition decreases helminth burden and increases drug efficacy in a natural host–helminth system. *Proceedings of the Royal Society B*, 288(1943), 20202722.

Tomita, K., & Hiura, T. (2021). Disentangling the direct and indirect effects of canopy and understory vegetation on the foraging habitat selection of the brown bear *Ursus arctos*. *Wildlife Biology*, 2021(4), wlb-00886.

Have you recently published on nutritional ecology? [Send us a link](#) to your article to be included in the next newsletter!

