StockSmart Workshop Series – Using Big Data to Inform Stocking Rate Calculations

November 6 and 13, December 2 and 11, 2024, 1-2:30 pm PT

Register for this virtual workshop series at https://us02web.zoom.us/meeting/register/tZEpc-2uqzkiHdRXgp1OHm0Ssye4Md9VjtkJ.

The objectives for this workshop series are that participants will:

1. Gain understanding of the purpose of StockSmart, how StockSmart works, its input data and calculations, and how to use this tool to inform long-term sustainable grazing planning.
2. Gain practical experience using StockSmart for pastures or allotments they manage grazing on, how to interpret the resulting calculations, and how to compare these calculations to current grazing management in their pastures.
3. Develop a StockSmart project in pasture(s)/allotment(s) of their choice.

You may register to earn 10 continuing education credits from the Society for Range Management or 5 credits from the Society of American Foresters.

Team:

Tip Hudson, Professor, Rangeland and Livestock Management, Washington State University Extension.

Sonia A. Hall, PhD, Ag Climate Resilience Specialist, Center for Sustaining Agriculture and Natural Resources, Washington State University.

Matt Reeves, PhD, CC-P, Research Ecologist, Rocky Mountain Research Station, USDA Forest Service.

Matt King, Web Applications Developer, Sr., Communications and Cyber Technologies, Division of Agriculture, Life and Veterinary Sciences & Cooperative Extension, University of Arizona.

Workshop 1: Why StockSmart, and what StockSmart can do for you

Date and Time: Wednesday November 6, 2024, 1-2:30 pm PT

Time	Activity	Who
1:00 – 1:15	Welcome and Introduction to the Team Entry questionnaire	Everyone
1:15 – 1:30	The need and the purpose: Why we developed StockSmart. What StockSmart is and how it can inform sustainable grazing plans.	Tip Hudson
1:30 – 2:00	The foundation: forage production from the Rangeland Production Monitoring Service (RPMS)	Matt Reeves
2:00 – 2:20	Q&A	Everyone
2:20 – 2:30	Workshop series Evaluation	Sonia Hall Everyone

Workshop 2: StockSmart input data to and forage production calculations

Date and Time: Wednesday November 13, 2024, 1-2:30 pm PT

Time	Activity	Who
1:00 – 1:15	Q&A – What has come up since the last workshop?	Everyone
1:15 – 1:20	Stocking Rate Calculations: Elements StockSmart addresses	Sonia Hall
1:20 – 1:40	Fractional Cover: The Rangeland Analysis Platform (RAP)	Sarah McCord, USDA ARS, RAP
1:40 – 2:00	StockSmart Calculation Factors: The ecological and management rationale underlying the harvest coefficient, shrub utilization, slope, distance to water and tree cover factors in StockSmart	Tip Hudson
2:00 – 2:20	Q&A	Everyone
2:20 – 2:30	Instructions for asynchronous workshop Evaluation	Sonia Hall Everyone

Recorded Tutorial: The tactics of using StockSmart – ASYNCHRONOUS

Participants will develop their own project, with guidance provided by a recorded tutorial. Project needs to be complete by the next workshop, on December 2, 2024.

Specific tasks:

- View StockSmart Introductory Tutorial (https://youtu.be/7Ksnnbu01HU?si=Bag6qv1HZHHn0cD9) at your own pace.
- Create a real-world project in a landscape you know and are (hopefully) managing grazing on. Your project should include: two or more pastures, two or more water sources, two or more scenarios where you changed pasture boundaries, water sources, exclusions, or the details of your operation to explore specific questions.
- Calculate stocking rate.
- Collect any available data on the stocking rate and rangeland health history of the project area. If there is no data available, identify what data you would collect to determine:

    - How do StockSmart calculated stocking rates compare to on-the-ground historical management?
    - How does this comparison relate to trends in rangeland health?
    - What do these comparisons tell you that can inform your grazing management?
- If needed, participate in office hours with StockSmart team members (dates will be confirmed by the November 13 workshop)
- Complete workshop evaluation

Workshop 3: StockSmart calculations of available forage

Date and Time: Monday December 2, 2024, 1-2:30 pm PT (not on Wednesday to avoid conflicts with National Grazing Lands Conference in Tucson, AZ)

Time	Activity	Who
1:00 – 1:15	Q&A – What has come up since the last synchronous workshop?	Everyone
1:15 – 1:45	The Calculations: Using the forage production and fractional cover data in calculations. Using the user-defined factors to calculate available forage and stocking rate	Matt King
1:45 – 2:15	Q&A	Everyone
2:15 – 2:30	Instructions for final, participant-led workshop Evaluation	Sonia Hall Everyone

Workshop 4: Your Use of StockSmart

Date and Time: Wednesday December 11, 2024, 1-2:30 pm PT

Time	Activity	Who
1:00 – 1:45	Participant Share Out (TBD based on number of participants)	Everyone
1:45 – 2:00	Compiling and ranking discussion topics: • what you learned, • what worked well, • what you still have questions about, • how you plan to use StockSmart in your own work	Everyone
2:00 – 2:20	Breakout discussion groups on top-ranked topics (dependent on number of participants)	Everyone
2:20 – 2:30	Wrap up Final evaluation	Sonia Hall Everyone

Additional readings:

Hudson, T.D., Reeves, M.C., Hall, S.A., Yorgey, G.G. and Neibergs, J.S., 2021. Big landscapes meet big data: Informing grazing management in a variable and changing world. Rangelands. *Rangelands,* 43(1) 17-28. https://doi.org/10.1016/j.rala.2020.10.006

Jones, M. O., Robinson, N. P., Naugle, D. E., Maestas, J. D., Reeves, M. C., Lankston, R. W., & Allred, B. W. (2021). Annual and 16-Day Rangeland Production Estimates for the Western United States. Rangeland Ecology & Management, 77, 112–117. https://doi.org/10.1016/j.rama.2021.04.003

Millward, M. F., Bailey, D. W., Cibils, A. F., & Holechek, J. L. (2020). A GPS-based evaluation of factors commonly used to adjust cattle stocking rates on both extensive and mountainous rangelands. Rangelands. https://doi.org/10.1016/j.rala.2020.04.001

Reeves, M. C., Hanberry, B. B., Wilmer, H., Kaplan, N. E., & Lauenroth, W. K. (2021). An Assessment of Production Trends on the Great Plains from 1984 to 2017. Rangeland Ecology & Management, 78, 165–179. https://doi.org/10.1016/j.rama.2020.01.011

StockSmart How-to User Guide: https://docs.google.com/document/d/1Trv8zYG_NSz18jgya_-bzWoyg3-8HDV1JCLFPuqsclA

StockSmart About Data: https://www.stock-smart.com/about-data

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